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OF

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FEBRUARY 23RD, 1897.

HENRY BALFOUR, Esq., M.A., *Vice-President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The following communication was read by Col. Woodthorpe:—

"The Nágás of Assam," by Miss G. M. GODDEN. Illustrated by the Optical Lantern, and by a number of weapons and dresses, etc., lent from the collections of the late G. H. DAMANT, Deputy Commissioner of the Nágá Hills, and of Col. R. G WOODTHORPE, R.E.

The Vice-President, in thanking Miss Godden and Col. Woodthorpe, invited remarks on the paper just read, and the invitation was responded to by Sir STEUART BAYLEY, Dr. LEITNER, Messrs. BOUVERIE-PUSEY, CROOKE, GOMME, and Dr. GARSON.

NÁGÁ *and* OTHER FRONTIER TRIBES *of* NORTH-EAST INDIA.

By GERTRUDE M. GODDEN.

(*Continued from Vol. XXVI, 2; November,* 1896.)

[WITH PLATES I–V.]

I. *Nágá Tribes.*[1]

(iv.)

MYTHS, DANCES, AND SONGS.

Myths.—Some Nágá myths are of what may be called the primitive science type; they are efforts to answer the question of how a certain people, institution, or custom came into existence.

A. C. R., 1891, p. 241. Thus the Aos profess to have had their origin from a stone which is situated between an Ao village called Longsa and the Sangtam village of Luban.

The Luhupas account for their presence on the earth by a story of cave-emergence, which they share in common with other primitive people. "They say, they came out of a cave in the earth, at a place called Murringphy, in the hills, about four days' journey north-east of the Manipur valley. They attempted to leave this cave one by one, but a large tiger, who was on the watch, devoured them successively as they emerged. Seeing this, the occupiers of the cave by a stratagem, throwing out the effigy of a man they had dressed up, distracted the attention of the tiger, and took the opportunity of leaving the cave in a body: the tiger on seeing the numbers before him, fled. They placed a large stone on the top of a high hill near this spot (which still remains) as a mark, from which situation they spread in the hills around."

Brown, p. 37.

A more elaborate, but partially Hindu, explanation of origin was given by the Rengma Nágás, an explanation covering the existence of four races and to some extent their distribution in different kinds of land. The story is taken from the journal of an officer who effected a tax settlement with the Rengmas in 1848:—"They have no written language but they hold a tradition of their origin,

Mackenzie, p. 215 (quoting Masters).

[1] In some cases information may be given as Nágá in the following paper which should include, or be referred to, other inhabitants of this frontier; these pages are published as open to correction on this point, especially as regards possible error in the use of Dalton's "Ethnology of Bengal."

. . . Formerly there were no Nágás in this world. It is here necessary to premise that the 'world' of the Rengma Nágá includes all that tract of country which can be seen from the highest peaks of the Rengma Hills, but no more. It includes Upper and Central Assam, and is bounded on all sides by lofty mountains inhabited by Abors, great enemies to the Rengma Nágás. Their tradition states that a young man whose name is not known came from some other country, or some other world, and alighted in the province of Assam. Wandering in the forests here he met with a young woman, with whom he was so much pleased that he took her to be his wife. They lived comfortably together, and in course of time had four sons,—Ram, Krishna, Ahom, and Naga." When they had grown up to manhood their father became anxious to portion them out in the world, but desired first to ascertain their capabilities. His house was infested with mice; to try the qualifications of his four sons he determined to set them to destroy the mice, and clear the house. Ram, as first-born, had the honour of the first chance. He tried his best, but effected little and was compelled to give it up as a bad job. Krishna was next called on, but he, instead of killing the mice, took up his pipe and began to play a merry tune and the mice all came dancing round him. Ahom was then ordered to try his skill, but Ahom was a poor weak soft-hearted lad without spirit, without energy, and wished for nothing but to sit still and smoke his tobacco, chew his pantamook, and enjoy himself. He consequently killed no mice. The patriarch was convinced of the incapability of the three elder sons, and ordered the youngest, Nágá to kill the mice, promising him a good reward if he succeeded. Nágá immediately set to work, and very soon cleared the house of mice, with which his father was so pleased that he gave Nágá the first portion of the inheritance, allotting him all the high peaks on the Rengma Hills. To Ram, from whom the Mikirs descended, he gave the next lower range of hills. To Krishna, father of the Kacharies, he gave the low hills and all the high spots of ground in the plains. To Ahom he gave nothing but the low ground in the plains, the rice pothars, the rivers, and the swamps. "Thus was the world portioned out at the first, and so has it continued to the present day, except that the Mikirs are encroaching on the inheritance of their younger brothers and extending their cultivation close up to his villages. Some have imagined that the Assamese have got the best portion, and that the rich and extensive pothars, which produce abundant crops without much labour, were selected for Ahom rather out of pity than otherwise; his father being convinced by his evident want of energy that he

would never exert himself sufficiently to effect any difficult office. The Assamese maintain their character to this day."

The Maram Nágás told what may be called a political myth, in explanation of the origin of their dual chieftaincy. "A former chief had two sons, of which the younger, who was the greatest warrior, desired to usurp the place of his elder brother. He urged his father to give him the chiefship. The old chief, afraid of his youngest son, and unable to deprive the eldest of his birth-right, determined on a stratagem. He told his eldest son to go and secretly bring the head of an enemy. This having been done, the old chief summoned his sons, and, giving each a packet of provisions, desired them to proceed in such directions as they chose in search of enemies, for he who brought in first the head of an enemy should be king. The brothers took their leave, the youngest proceeding where he thought he would soonest procure a head, the eldest bending his steps to where he had concealed the one already taken. This he brought out of its concealment, and proceeded with it in triumph through the village. Nor was the youngest long in returning with a head, but having been preceded by his brother, the chiefship was declared to be the right of the eldest. This, however, did not satisfy the younger son; he persisted on being called chief, and the matter was compromised by both being allowed to remain, one as the great, the other as the little chief . . ." Brown, p. 32.

The Luhupas have even provided an origin for their mode of hair dressing. The men shaved the sides of the head leaving a ridge of hair on the top, some inches broad on the top of the head and narrowing to the front and back with a small pig-tail; the crest of hair was sometimes long enough to be parted. "Their tradition regarding this peculiar fashion is to the effect, that formerly, ages ago, the two sexes wore their hair alike, and combed back as among the Kukis; to distinguish them, the above effective plan was resorted to." Brown, p. 38.

Two beliefs prevalent among the Nágás of the Nágá Hills District may be inserted here, though not strictly myths. In common with many, perhaps all, primitive people they believe in the power of men to assume animal shape; a belief which in their case takes the form of 'tiger-men,' *i.e.*, men with the power of turning themselves into tigers. "Tiger-men," Mr. Davis says, "are well known, and I have the pleasure of the acquaintance of one. This gentleman is a Semá chief of a small village in the Tizu valley. He himself disclaims the power, but that he has it is implicitly believed by the whole of the Semá and Angámi tribes. A whole A. C. R., 1891, p. 250.

A. C. R., 1891, p. 251. village of tiger-men is said to exist in the far north-east."[1]

Ibid. The Nágás of this District also believe in the existence of a village inhabited only by women, lying in the direction of the tiger-men village, *i.e.*, towards the far north-east; "The population of this village is kept up by its inhabitants being visited by traders from the surrounding tribes."

Dances.—The dramatic element is very conspicuous in the Nágá dances. "All the Nágá dances are imitations of some action" according to Robinson. The war dances of the more Eastern Nágás, as described by Dalton, commenced with a review or sham fight. Armed warriors advanced in extended order, nothing being visible but black shields creeping along the ground. When sufficiently near to their imaginary enemy, they sprang up and flung the spear; this was supposed to take effect, and seizing a tuft of grass, representing the head of the dead foe, with the left hand, and cutting it out with the battle-axe, they retreated with the clod hanging by the grass over their shoulder, as the skull or scalp. This was followed by a sort of triumphant song or dance in which the women joined.

Robinson, p. 395.

Dalton, p. 41.

From notes by Mr. Damant it appears that in North Kachar the dances were affairs of the village, as were also the songs appropriate to each dance. "They seem to have a great variety of dances; new ones are to be seen in every village. Each dance has its own peculiar song which is chanted by the whole village. Their war-dances are very savage performances. They are generally danced by the older men, who are supposed to know more about such matters. Each man is armed with his spear and the large shield, at the top of which he carries a quiver full of *pángis*, *i.e.*, small sharpened stakes of bamboo which they stick in their path during a retreat. One of these dances represents a fight and retreat, another a bear-hunt, and one is supposed to be danced after a victory when they come home in triumph with the heads of their enemies which are placed in the middle while they dance round them. The whole proceeding invariably winds up with a 'Ho' or shout. They begin very slowly, each side repeating 'ho'; this gets gradually faster till they get into a perfect whirl of excitement, yelling as only savages can and throwing their spears into the air." In dancing, these Nágás, Mr. Damant says, all came down in procession led by their band, which consisted generally of a

G. H. Damant, 1875, Calcutta Review, vol. lxi.

[1] Mr. W. Crooke tells me that he thinks it may be safely said that the idea of men turned into tigers is general in Northern India.

drum or two, and a pair of brass cymbals; this was followed by the men carrying the tail feathers of the great hornbill all dressed in their best, and sometimes with their legs painted white; lastly, came the girls led by the eldest and gradually dwindling down to small creatures of about seven. They would be all dressed exactly alike, and walk in regular order; when they reached the dancing place they divided into two parties each led by two or three men followed by girls. The cloth used by the North Kachar Nágás in dancing had small triangles at regular intervals woven into it with red and blue thread, and fringes at each end. These Nágás are described as extremely fond of dancing, the women being the chief dancers and taking most interest in the exercise.[1]

Stewart, p. 613.

Stewart, pp. 615-16.

Songs.—As regards the Nágá songs we have the following notice given by Dr. Brown, of the Luhupa tribe:—

Brown, p. 42.

"Their singing is pleasing, being executed in well-toned parts, blending together and forming a pleasing melody. Men and women, in equal numbers, sing thus together, and sometimes men alone. The melody is always in slow time, whatever the nature of the song, joyous or otherwise. They understand the meaning of their songs as a rule, and these vary, though those of a melancholy nature prevail. The burden of one is to this effect:—'A young man and woman were attached to each other: the youth proceeded into the jungle for cane to make a basket for the girl, he is devoured by a tiger, and announces his fate to his lover in a dream.'"



CHERHÉ, HEADMAN OF MEZAMINÁSA.

[1] Brown, (p. 42) says speaking of the 'Tonkhulus' and Luhupas that among the former both sexes sing and dance together. Among the latter the "Luhupa men only dance a sort of war dance, the women supplying them with liquor the while . . ."

(v.)

Cultivation—Trade—War.

Cultivation.—In the cultivation of the Nágá and other tribes on the frontier we find what is known as the *jhúm* system, a system by which the land is tilled for some two or three years, and then allowed to lie fallow for some seven or ten years.

In North Kachar the Kukis removed their villages to fresh sites when the land was used up, but the Nágás of this district, who showed great attachment to their village sites, would proceed to great distances to cultivate, notwithstanding the labour of carrying back their harvests. Stewart writing forty years ago, gives a vivid description of the *jhúm* cultivation in North Kachar:—

Stewart, p. 607.

Stewart, p. 603.

"The prevailing jungle in North Kachar consists of a small single bamboo, which grows uniformly and closely together, the stems not being more than ten inches or a foot apart at their base, and reaching a height of thirty feet. This jungle extends all over the lower hills and the spurs from the high ones, and is only absent on the tops of the mountains and in some low grounds to the north. This wilderness of bamboo is the great cultivating ground of the district, and the process is thus managed. Early in the cold season large parties of the cultivators proceed to the jungles in the vicinity of their villages, and having selected a good patch, with as much soil on it as possible, commence cutting down the bamboos and clearing the space. The bamboos are cut off about two feet from the ground, the roots and stumps being allowed to remain in the soil; . . . the cut bamboos are left to rot and dry on the ground, and . . . by the months of March and April [are] almost as inflammable as gunpowder. Towards the end of the cold season, these fields of cut-bamboos, sometimes embracing the whole of a hill, at other times stretching along the whole face of ridges and valleys, are set on fire in various places. Nothing can exceed the fierceness of the conflagration, or the glorious effect produced by such large masses of flame, roaring and lapping the hills on all sides, and the enormous volumes of smoke that are emitted and hover like clouds in the air. The conflagration is over in a few hours, and leaves on the ground a coating of ashes about an inch or two in thickness, and this is the only manure necessary to make these sterile hills yield fertile crops of almost any kind. By means of the hoe (a rude and uncouth instrument, consisting merely of a wooden handle about two feet in length, with a piece of iron attached to the

end of it, something in the manner of an adze, only not on such a large scale) the soil lying below the ashes is turned up and mixed with them in the places between the stumps of the burnt bamboos, which are still left . . . these roots and stumps serve in a great measure to prevent the loose soil being washed away from the faces of the hills, and furthermore facilitate the re-growth of the jungle, when cultivation on the spot is abandoned. The soil being thus prepared, the seeds are dropped in, nor is care taken to allot to different vegetables, different spaces, but paddy, sugarcane, tobacco and cotton are all found growing in the same beds. The harvest is reaped in September or October, sometimes even as late as November and December, and the ground may again be made to yield for another year or two, according to the custom of the cultivators or the richness of the soil. . . . When the land is considered exhausted, jungle is allowed to re-cover it, the bamboo again springs up in its old locality, and in the course of between seven and ten years, the soil is once more fit to be brought under cultivation. This is the only kind of culture practised in N. Cachar, and is common to all the tribes with very trifling variations."[1] Mr. Damant described the Nágás of North Kachar as cultivating entirely by jhúming; "In the jooms rice, cotton, pepper, and pumpkins are all grown simultaneously, and each is reaped as it grows ripe."

G. H. Damant, "Calcutta Review," vol. lxi.

According to a Note on some of the Nágá tribes in the recent Assam Census Report, all the tribes of the district, except the Angámi, cultivate their rice by the *jhúm* system; and of the Angámi the western portion employ this method. The Note is not clear whether this statement refers to other than Nágá tribes, and whether "district" is to be taken in the political sense only. Colonel Woodthorpe writes that "jooming" is common to Lushais, Garos, all Nágás except the Angámis, etc.: he describes the process as cutting and burning jungle on a hillside and then cultivating on the natural slope of the ground thus cleared; such fields were not irrigated.

A. C. R., 1891, p. 237.

The Ao Nágás of the present day cultivate by the *jhúm* system. Land is kept under cultivation for two years, and then left fallow for about ten years; it is abandoned after the second year, partly it is said by reason of the growth of weeds, the roots of which are never eradicated. The Lhotas also cultivate by jhúming, cultivating the land for two years, with a fallow period of eight or ten years.

A. C. R., 1891, p. 243.

Ibid., p. 248.

[1] Stewart, 1855, p. 603.

Infra, s.v. Angámis.

The Angámi use of terraces, which are cultivated year after year, will be described later.[1]

Brown, pp. 32, 42.

The Luhupas appear to have cultivated in part by jhúming, in part by terracing the hill slopes. Some other instances are mentioned by Dr. Brown of terrace cultivation.[2]

The times for sowing show considerable variation. In the Nágá Hills, two varieties of rice according to Sir W. W. Hunter were sown, one in April and May, the other in June or July. Whether the latter is grown by the Nágás is not stated; it is reaped in October and November. The former, which appears to be cultivated on more primitive lines, is reaped in June and July; probably this is the Nágá *jhúm*-grown rice. The jhúm-grown crops, as we have seen, are described by Stewart as harvested in September and October, and sometimes in November and December. The Ao harvest does not begin before August. The only agricultural implements in the Nágá Hills District, according to Sir W. W. Hunter, were a dáo (the hatchet-sword) to cut down jungle, and a hoe for digging. Mr. Damant says of the Nágás in North Kachar, "Their only tools are the dáo, a rough kind of axe, and a short-handled hoe." No cattle were kept by the North Kachar Nágás, and only a few goats, buffaloes, or metnas; these were kept entirely for their flesh, the Nágás neither drinking the milk nor using them in ploughing.

Hunter, "Statistical Account of Assam," ii, p. 191.

Supra, p. 194.

Hunter, ii, p. 190.

G. H. Damant, "Calcutta Review," vol. lxi.

Ibid.

Two methods of securing a good crop resorted to by the Lhota Nágá, a tribe described by Mr. Damant as very low in the scale of civilisation, deserve notice. The Report of 1854 tells us that it was a very common practice with them to cut off the heads, hands, and feet of anyone they could meet with, "without any provocation or pre-existent enmity, merely to stick up in their fields to ensure a good crop of grain." The following incident is also given in the Report of forty years ago. A boy carried off from a village by Angámi Nágás was purchased by the Lhota tribe; a man of the village dying immediately after the purchase, it was considered a bad omen, and that ill-luck had befallen on account of the captive child:—"they therefore flayed the poor boy alive, cutting his flesh bit by bit until he died, these superstitious savages then divided the whole body,

Mills, p. clv

Mills, p. clvi.

[1] See Dalton, p. 40, *re* cultivation on this frontier.

[2] Sir W. W. Hunter, under the heading of the Nágá Hills, says the average size of a Nágá's holding was estimated at from one to two acres; he does not state whether this is as held under native law, or from Government. (Hunter, ii, p. 193.)

giving a piece of the flesh to each man in the village to put into his *dolee*, a large corn basket from which they suppose all evil will be averted, their good fortune will return and plentiful crops of grain will be ensured."[1]

Woodthorpe, "Journ. Anthrop. Inst." xi; Butler, "Journ. As. Soc. Bengal," xliv, i; Damant, "Calcutta Rev.," vol. lxi.

Nágá cultivation is said to have included rice, pea, several varieties of small grain, Indian corn, yams, chillies, ginger, garlic, pumpkins, and other vegetables, and cotton; gardens with sugar-cane, almonds and wild raspberries are mentioned for North Kachar.

Trade.—The Nágá tribes show vigorous trading energies. The Angámi, as will be seen, were recorded forty years ago to have even reached Calcutta for trading purposes. Twenty years ago both the western and eastern Nágá tribes were described as, in many cases, in constant trade with the plains; they were said to display considerable aptitude and keenness as traders, though retaining their savage characteristics, and occupied in incessant raidings and blood-feuds.

"Assam Administration Report, 1874-6," ii, B., p. 13.

By about 1855 it was found that trade had so strong a hold among the eastern Nágás that the policy of closing the markets on occasion of a murder or outrage by hillmen was speedily followed by surrender of the guilty parties; the border Nágás frequented the plain markets regularly, and combined to exclude therefrom the Nágás of the upper hills. The Luhupas were described in 1874 as not going to Assam, but as trading daos, spears, cloths etc. to Manipur for which salt was taken in exchange. Their trade, it is said, was very restricted.

Mackenzie, p. 97.

Brown, p. 43.

Mills, p. cxii.

The Report of 1854 describes the Nágás as keen barterers,[2] but, at the same time, just and open in their dealings; the border Nágás resorted annually in the cold season to the plains to trade, salt and cotton being the chief articles. The Nágás do not always appear in the light of "just and open" traders. The Angámi devices of false coin and imitation gunpowder will be found noted below, and the Lhotá Nágás know the use of spurious weight. Their outer villages have a large trade in cotton with Marwari traders of Golaghat; "A great deal of this cotton," Mr. Davis says, "is taken down the Doyang by boat in the cold weather, and is duly watered half a day's journey above Golaghat in order to increase its weight. I have

Infra, s.v., Angámis.

A. C. R., 1891, p. 248.

[1] See Mills' Report, clvi. The punctuation of the text has been left in its original vagueness.

[2] "The Nágás are every (*sic*) keen barterers."

seen this being done myself." Unfair trading does not seem to have been only on the Nágá side. As far back as 1854 we find a note of Rengma trade with the Bengali:—"A considerable quantity of cotton is grown in their hills besides rice which they barter for salt, hand-bells, beads and hoes to petty Bengalee hawkers who proceed up the river Jumoona with small supplies from Nowgong and sadly impose on these uncivilised tribes in their dealings with them both in price and weight."

Mills, p. cxxviii.

Crafts.—As regards Nágá crafts, we may notice that in 1855 the North Kachar Nágás manufactured dhaos, spears, hatchets and hoes "there being generally in each village an individual who officiates as blacksmith"; they made two or three kinds of coarse cloth, the cloth used in dancing having small triangles at regular intervals woven into it with red and blue thread. Iron was greatly valued, and only used for weapons—wood, bamboo or clay invariably serving for cooking utensils. The Report of 1854 describes the Angámi as manufacturing a coarse cloth from the bark of the stalks of the nettle plant. In the same Report good house building was noticed among the Nágás. The Angámi were making iron arms and implements in 1874; in the Report of 1854 they are described as importing weapons, handbills, and hoes from Manipur. A salt industry existed among the Luhupas.

Stewart, p. 613.

Mills, p. cxlv.

Brown, p. 37.

Mills, p. cxlv.

Brown, p. 38.

Mr. Damant says of the North Kachar Nágás, "They have hardly any brass or earthen vessels; everything is made of wood. A man may often be seen hacking at a large log with his dao to make a single plate . . . ;" bamboo "chungas" were used for cooking rice, and bringing water; the cloth worn by both men and women was woven from cotton of their own production, and was curiously bordered and marked with triangular-shaped patches of red and black.

G. H. Damant, "Calcutta Review," vol. lxi.

Of the Nágás of the present day it is briefly stated, as regards the Nágá Hills District, that the manufactures of all the tribes are the same, consisting of cloths, cooking pots, spears and daos, and agricultural implements, none of these articles being "of any artistic or commercial value." Sir James Johnstone in his recent book describes the Nágás, perhaps referring specially to the Angámi, as skilful iron-workers, turning out very handsome spears; "Their women weave substantial and pretty coloured cloths, and every man knows enough of rough carpentering to enable him to build his house, and make pestles and mortars for husking rice. They make rough pottery, but without the potter's wheel."

A. C. R., 1891, p. 249.

Johnstone, p. 33.

Brown, p. 42. The Luhupas were noticed in 1874 to possess no knowledge of medicines.

It may be noticed that the Nágás of the present day are more than vague as to computing their age.—"No Nágá," Mr. Davis A. C. R., 1891, Appendix A, xxix. writes, "has the vaguest idea of his own age, and in most instances ages, as given in the enumeration books, are overestimates. I have always found that *Nágás are inclined to overestimate their ages.*"

In 1879 Sir W. W. Hunter wrote of the Nágá idea of weights and measures as vague. The size of a thing was described by gesture and action, or by comparison. The length of a journey was estimated by the number of nights required to sleep on the road. The day was divided off and alluded to with reference to the particular act that was commonly performed at that particular period of the day. "However the Nágás are fast beginning to adopt the ordinary weights and measures current in the neighbouring districts, and before long it is believed that the Bengal and Assam weights of the *man* or *maund* (82 lbs. avoirdupois), and the *ser* (2·05 lbs.) will be as common in the Nágá Hills as in other parts of the country."[1] Hunter, ii, p. 174.

War.—Reference has already been made to the constant state of internecine warfare which prevailed in the Nágá villages. All the Nágá tribes of the Nágá Hills district are head-takers: the desired trophies would be won by treacherous attacks on individuals, or sometimes by large expeditions composed of combined villages. The method employed by the Angámi[2] sufficiently describes the mode of Nágá warfare. The condition of some of the tribes may be seen in the facts that the Angámi villages were practically strongly posted hill stockades; and that in the villages of North Kachar, during the night a watch was kept and the streets were regularly patrolled; and that among the eastern Nágás in 1873 every village was constantly prepared against surprise, parties of men keeping continual watch and ward over the village gate-ways. A. C. R., 1891, p. 248. G. H. Damant, Mackenzie, p. 397.

This state of constant feud was somewhat mitigated by a custom, in some cases, of sparing the women in inter-clan feuds, if we may rely on Dalton;[3] the recent Census Report speaks of the inter-*khel* Angámi feuds as more bitter than those

[1] Hunter: "Statistical Account of Assam." Vol. ii, p. 194.

[2] *Infra*, s.v. Angámis.

[3] "The several clans [of the Angámi and Katcha Nágás] are frequently at war with each other, and it is noticeable that in these intestine wars the women of the contending parties visit each other at their different villages without fear of molestation. But when at war with other tribes, their attacks are treacherous, and they spare neither sex nor age." Dalton, p. 44.

carried on between hostile Angámi villages. Possibly the divergence may be owing to the fact that the late Report refers to khel feuds, while Dalton may intend to signify inter-village hostility. In the less fierce Luhupa quarrels the
McCulloch, p. 67. hostile parties confined themselves by mutual agreement to certain fixed bounds within which they might kill one another: in these milder quarrels the women and children were not injured. A similar desire to lessen the evils of feud may be seen in the Luhupa custom of giving
Brown, p. 41. warning to a village about to be proceeded against:—"When the villagers are desirous of fighting, notice on the one side is invariably given; and, as amongst the Angamis, the date may be given, and a stand-up fight in the open agreed upon at a given place. In other cases, intimation is made to one village from another that its members from a certain time will be killed, whenever an opportunity is found." This tribe handed feuds down from generation to generation, the original causes being not unfrequently completely forgotten.

Intermarriage has been observed among Eastern Nágá tribes
Mackenzie, p. 403. at feud with one another. An incident of an Eastern Nágá feud recorded in an official report of the then Assistant Commissioner, Mr. Carnegy, throws a vivid light on the state of the tribes in 1870–3. A strong and populous tribe, the Mekelai, had been for many years at feud with a tribe[1] called Bordoobya. In 1873 the former numbered some 500 fighting men, their losses being kept up by men from weaker tribes joining them; the latter counted 600 or 700 warriors, under one chief. "This chief, Lalong, had much influence and must have been an able man. About three years ago he fell into an ambush and was killed: a party of Mekilais were
Mackenzie, p. 402. lurking near a stream under Bordorbya on the look-out for heads one morning, and had an extraordinary piece of luck, for Lalong, accompanied by only two followers, came down to look at a fish-trap, and was, of course, killed. The Mekilais are exceedingly proud of this fact, and it was acted in pantomime before me with great *éclat*. The Nágá story goes that after the Bordoobya Chief was down, but still alive, one of the Mekilais commenced cutting off his head, but in a bungling way, when the chief reviled him for carrying a blunt dhao, and said 'take my dhao which is always sharp and cut my head off properly.'"[2]

[1] Called both clan and tribe in the Report.

[2] The manner in which it is possible for a Nágá to regard the taking of life is illustrated by the late Sir James Johnstone. Speaking either of the Nágás of the Nágá Hills District in general, or of the Angámi in particular, he says, "To kill a baby in arms, or a woman, was accounted a greater feat than killing a man, as it implied having penetrated to the innermost recesses of an enemy's

The arms of the Nágás are the spear and a weapon already frequently mentioned, which is known by the Assamese word Johnstone. *dao*, and is described as a heavy short sword, and Peal. said to be used as a hatchet or mace. It is described as answering many purposes, being used in war, as a Brown, carpenter's tool for wood cutting, as a chief agricul- p. 35, etc. tural implement, and among the Angámi, as the privileged weapon of noted warriors. Dalton mentions a "pole-axe"; possibly he means this many-sided instrument. Shields are used, and some instances of the use of the bow and arrow are recorded.[1] The Nágás also employ *pângies, i.e.*, G. H. small sharpened stakes of bamboo, to stick in the Damant. path during a retreat; in the war-dances of North Kachar Nágás the pângies were carried in a quiver at the top of the shield.

Helmets of wicker-work or plaited cane are mentioned as in use among the Nágás. The name of the Luhupa tribe is derived from the distinguishing cane helmet worn by them in battle (Manipuri *luhup*, helmet). This head-piece was conical, about a foot high and covered with a layer of fur and hair, black and red in colour: to the sides round wings were stitched; in front was a disc of polished brass (called by Mr. Damant a brass cymbal); occasionally a long crescent-shaped piece of Brown, buffalo horn was placed in front: warriors of dis- p. 41. tinction who had slain many people wore the hair of their victims depending from the side ornaments of the helmet which accumulated into a kind of fringe round the face, and women's tresses were preferred as being longer. The Luhupa shields were ornamented with tresses of human hair, and wool dyed in various colours.

A. C. R., Among the Aos of the present day small cane 1891, p. 243. helmets are worn, ornamented with boar's tusks.

Mackenzie, It may be noted that the spears of different tribes p. 403. among the Eastern Nágás differed in pattern, the difference consisting in the length of the shaft and situation of the ornamental tufts of red and black goat's hair on it. According to Robinson some of the Eastern Nágás used a tomahawk.[2]

country, whereas a man might be killed anywhere by a successful ambush. I knew a man who had killed sixty women and children, when on one occasion he happened to come upon them after all the men had left the village on a hunting expedition." Sir J. Johnstone: "My Experiences in Manipur," 1896, p. 30.

[1] Two writers mention the use of the cross-bow; Mr. Peal (in opposition apparently to Robinson), "Journal Asiatic Society of Bengal." Vol. xli, p. 26; and Mr. Davis in the "Assam Census Report, 1891," p. 246. According to the former the Nágá name for a cross-bow was *kap*.

[2] Robinson: "Assam," p. 393.

The national habit of head-taking must be noticed in speaking of Nágá warfare, although it seems to be by no means a merely military matter. Among the Western Angámi no man could assume the "toga virilis," Sir J. Johnstone says, viz., a kilt ornamented with cowrie shells till he had slain an enemy, (doubtless including taking the head) and in the more powerful villages he might not marry unless so ornamented.

J. Johnstone, p. 30.

The Eastern Nágás were permitted to wear a special collar called the Kapentali on taking their first head; a collar of boar's tusks worn ever after on the second; and after taking a third, a man might wear "on great occasions" an apron covered with cowrie shells, kept a tally of heads taken on his cloth, and was looked upon as a great warrior. This tally was kept in a pattern painted on a white stripe let into the middle of the sheet. "I have counted," Mr. Carnegy wrote, "up to twenty-five heads on a Mekilai's cloth. All these he declared were taken with his own hands, and included those of men, women, and children indiscriminately." Heads would be obtained by individual killing, as in the common method of lurking about the water ghat of a hostile village for the first woman or child that came to draw water; or would be the object of expeditions on a large scale. There are indications in this Nágá practice of a belief in the special potency or efficacy attached to the head or brain, a form of primitive belief which has been fully illustrated by Mr. Frazer in his "Golden Bough."[1] An old account of the Nágás says that with them "the death of an enemy is not the satisfaction of revenge but merely the means towards it. The end is the possession of the dead body"; this account says that they mangled and insulted the heads taken, cursing them, throwing rice and liquor on them, and saying "call your father mother and relations to come here and join you in eating rice and drinking spirits, when we will kill them with the same sword." This agrees with the Angámi usage,[2] and both recall a Kuki rite, witnessed some ten years ago, in which food and drink were placed beside the heads "not out of derision, but in order that the disembodied spirits might not haunt the victors, but travel in peace to the city of the dead . . ."

Ibid.

A. C. R., 1891, p. 249.

"Journal Indian Archipelago," 1848, ii, pp. 232-3.

Mackenzie, p. 325.

The natural result of such convictions would be a keen desire to preserve all the skulls and heads possessed by a village or individual. Accordingly we find that Capt. Brodie,

[1] "Golden Bough," vol. i.
[2] *Infra*, s.v. Angámi.

Mackenzie, p. 403.

on visiting a Nágá chief, found the porch of his house "a perfect Golgotha, there being from fifty to sixty human skulls, besides those of elephants, buffaloes, Nágá bulls, bears, tigers, pigs, monkeys etc., the larger kind lying on the ground while the smaller were arranged around the walls and posts literally covering them." These would seem to have been human skulls privately taken as the Report proceeds; "In the Morungs[1] are kept the skulls carried off in battle, these are suspended by a string along the wall in one or more rows over each other. In one of the Morungs of the Changuoe village, Capt. Brodie counted one hundred and thirty skulls, . . . besides these there was a large basket full of broken pieces of skulls. In another village (Moolung) the Morung had been burnt down and the very ashes of the skulls had been collected and preserved, so much store do they set by them." The extension of the principle to the heads of animals confirms the fact of some primitive belief lying behind an apparently merely barbarous trophy. McCulloch mentions that the Luhupas hung up in their houses the heads of all animals, including even fish, that they might have killed; but they regarded the house bare which had not hanging in it a festoon of human heads. The suspension of the heads of the slain was the peculiar right of the village of a clan-president,[2] according to the account of 1848. The heads were hung on the "*nabor*" trees in his village, after a feast of victory had been held for three or four days, other villages not being entitled to the right; afterwards a great feast was given and the heads were taken from the trees and displayed.

Mills, p. cxiii. *Ibid.* McCulloch, p. 68. "Journal of Indian Archipelago," ii, 232–3.

In the custom of head-taking an immediate, if not a primary, cause has been found for the isolation noticeable among Nágá clans. Mr. Peal, perhaps speaking rather of the Eastern Nágás, says, "As a consequence of the . . . custom of head cutting, and its isolating influence, few Nágás reach the plains, but those living on the border. We thus see a community of some hundreds perched on a hill, and depending almost exclusively on their own resources, constantly fighting others similarly isolated, on all sides, yet thoroughly able to maintain themselves. Perhaps in no other part of the world can so complete a tribal isolation be seen, and subdivision carried to such an extreme."[3]

Peal, p. 25.

[1] *Supra*, p. 180.
[2] Called by the authority for this note *Khonbao*.
[3] S. E. Peal: "Journal of Asiatic Society of Bengal." Vol. xli, p. 25.

NOTE.—In describing the Morrang of an Eastern Nágá village which Mr. Peal roughly estimated to contain some 350 skulls, he says, "No lower jaws to be seen, nor hands and feet, as I had expected. The latter are always cut off with the head when a man is killed, and confer another kind of 'ák' or decoration." In the house of the "Rájah" of this village "About 50 or 60 lower jaws of the boar, made a fine display . . . . . some huge tusks among them—evidently all hung as trophies of 'feasting." Peal, pp. 18, 19.



EASTERN ANGÁMI (previously published in the "Journal of the Asiatic Society of Bengal," vol. xliv, 1).

(vi.)

VILLAGES, DRESS, ETC.

Villages.—Little need be said of the external setting of Nágá life. The Angámi hill villages and their fortifications are described below: details of Ao defences, stockades, lookouts, etc., will be found in the "Assam Census Report."[1] The gate through the stockade of the last ditch into an Ao village would be roofed by a large gable roof, thus resembling a lych-gate.

A. C. R., 1891, p. 242.

G. H. Damant.

The North Kachar villages were described as surrounded by a slight attempt at a stockade, and the Semá villages of the present day are practically without artificial defences of any kind.

A. C. R., 1891, p. 247.

The villages of the North Kachar Nágás were described as permanent. The people of this locality showed great attachment to their village sites, a feeling which Lieut. Stewart suggests might be partly caused by their custom of burying the dead at the doors of the houses: "nothing," he wrote, "short of the direst necessity will force the Nágás of these hills to relinquish their native spot of ground . . . at the present moment I know of a village site, in the neighbourhood of the Angámi frontier which has been abandoned owing to the repeated attacks which had been made on the villagers while there

Stewart, pp. 607-8.

[1] "Assam Census Report, 1891," p. 242.

resident. The Nágás who occupied that site have come into the more central parts of the district, and have allied themselves with other friendly villages; but on greater security being afforded them, they would to a man return and rebuild their old village. When the soil near their homes is exhausted, they proceed to great distances to cultivate, little heeding the labour of conveying back their harvests; . . ." Water was unattainable near their village heights, in most cases, yet they did not murmur at having to convey it on their backs from the bottom of valleys, 500 or 600 feet in perpendicular ascent, and perhaps a mile in distance, strings of women laden with bamboo choongas making the journey morning and evening. From their attachment to the country and to particular sites, Stewart suggests an inference, that the Nágás "are the earliest inhabitants of the soil."

Brown, p. 39. A. C. R., 1891, p. 250.

The Luhupas have been described as having fixed village sites. The recent Assam Census Report specifies the Angámi, Lhota, and Ao tribes of the Nágá Hills District as living in large permanent villages.

G. H. Damant. A. C. R., 1891. G. H. Damant, "Journ. R. As. Soc." vol. xii, n.s. A. C. R., 1891.

The Nágá houses were sometimes built in regular streets, sometimes scattered without apparent arrangement. The villages were in some cases of a considerable size. Dalton says, generally of the more Eastern Nágás, that they lived in large villages "some of not less than three hundred houses." Two villages among the Rengmas each contained more than five hundred houses: the Angámi according to the recent Census Report, live for the most part in large villages, reaching in the case of Kohima to over eight hundred houses.[1]

Stewart, p. 612.

The houses of the Ao Nágás are described as large, clean, three-roomed buildings. Some of the tribes build their houses on the ground; and the North Kachar Nágá do not appear to have used platforms.

The Nágá houses on the other hand, mentioned in a Memorandum of the Report of 1854, are described as "large and well built on posts, with a raised chung or floor of bamboo having steps leading up, many are situated on the slope of the hill, so that though the entrance gable end may be only two feet from the ground, the opposite end would be ten or twelve . . . " The Ao houses of the present

Mills, p. cxiii.

[1] Brodie noted that, of the Nágá Hills villages met with in his tour between the Diko and Dyung rivers, "few could have had less than 2,000 inhabitants", and the largest might contain from 4,000 to 5,000. "India Office Records." Report by Capt. Brodie, 1844, § 53.

A. C. R., 1891, p. 243. day appear to be somewhat similar, the "outer" room being on the ground and the two "inner" rooms raised off the ground.

A. C. R., 1891, p. 247. Small granaries are generally used by the Semá of the present day, as by most Nágá tribes; these granaries are clear of the houses of the village, and are therefore safe in case of fire.

G. H. Damant, "Calcutta Review," vol. lxi, 1875. A Nágá "poonjee" of North Kachar has been described as always a long street of long low thatched houses with roofs touching the ground. All the road was strewn with stones erected to the dead, on which their descendants sat in the evening and drank their rice-beer. At each end of the village, generally on the highest point of land, stood a dekha chang;[1] and if the village was large, there was occasionally a third in the middle. The village was generally surrounded by gardens in which grew sugar-cane, almonds, and wild raspberries, and a little apart from the dwelling houses stood the rice "golahs" in a place by themselves to avoid the danger of fire.

Dress and tattoo.—A brief notice may suffice for Nágá dress. An interesting trait of the Eastern Nágás is their use of a kind of clan tartan. These tartans were described by Mr. Carnegy in an official paper on the Eastern Nágás,[2] as distinct for each clan:—"In dress, such as it is, all [the Nágás of different tribes on this frontier] are pretty much alike, only each clan has its own tartan . . . Everyone except the very poorest has a cloth in addition. This cloth is of cotton, dyed black, and dark shades of red, blue, and green, arranged in stripes differing with different tribes. This cloth is worn over the shoulders."

A. C. R., 1891, p. 248. The pattern of a small apron worn by the men of the Aos at the present day varies from village to village.

Ibid. A cloth and apron worn by the men of the Lhotá Nágás are "either of light blue or white striped horizontally with thin lines of red, or, for the lower villages, of dark blue striped with broad lines of red."

Butler, "Journ. As. Soc. Bengal," xliv, I, p. 325. According to Captain Butler every Nágá tribe used a peculiar pattern of cloth, "like our own Scotch Highlanders . . . and thus any individual can at once be easily identified by his tartan."

G. H. Damant, "R. As. Soc. Journ.," vol. xii, n.s. The cockscomb hair dressing said to distinguish the Luhupas and the tradition attached to it have already been noticed. The women of the Chungli and Mongsen subdivisions of the Ao Nágás are

[1] See above, p. 179.

[2] P. T. Carnegy, No. 415, § 15, 1873. (Quoted by Mackenzie, p. 403.)

A. C. R. 1891, p. 243. noticed to have diverse methods of tying the hair; the cloths of both are similar.

Decorations are used to record prowess in head-taking, and ornaments might be changed in sign of marriage. Thus among the Aos a collar of wild boars' tusks, and cowrie cuffs, are worn by all men who have taken a head; nowadays men who have not taken a head have begun to wear these distinctive marks. An elaborate system of this kind has been previously noticed.

Ibid.

A. C. R., 1891, p. 248. The recent Assam Census Report notes that among the Nágá and Kuki tribes of the Nágá Hills District, the taking of a head entitles the man who takes it to wear certain ornaments according to the custom of the tribe or village.

Brown, p. 39. Speaking of the Luhupas, Dr. Brown says, "Shell necklaces and beads are worn, and before marriage bracelets of brass; these, after marriage, are replaced by round bracelets of a metal-like solder or lead, seven on the right arm and four on the left."

Stewart, p. 614. Among the North Kachar Nágás dress served to distinguish married women and maidens. The former left the bosom uncovered, the latter had another cloth tied tightly round the breast; also the married women wore "long hair plaited, and knotted at the back, or sometimes flowing naturally over the shoulders. The unmarried women have their hair cut off their face in a square fashion, and brushed down upon the forehead, nearly to the eyebrows."

Butler, "Journ. As. Soc. Bengal," xliv, I, p. 326. Captain Butler describes ear ornaments worn by some of the Nágás as "huge bunches of white cotton, sometimes as big as a man's fist, ... giving a most queer monkey-like look to an otherwise not bad looking countenance."

A curious item of Nágá dress is a wooden tail. Mr. Damant describes the men of the Sema tribe as wearing "tails about eighteen inches long, made of wood, to which bunches of goats' hair are attached." In a letter of 1877, from Manipúr, he describes a Nágá tribe, under the name of the Mow (?) Nágás, who wear "tails made of wood and covered with bunches of goats' hair which they fasten on behind [the] rest of their clothing is a small piece of black cloth . . . ."

G. H. Damant, "R. As. Soc. Journ.," vol. xii, n.s.

G. H. Damant, letter, 1877.

The late Sir James Johnstone, speaking apparently specially of the Angámi Nágá, says they have "tails of wood decorated with goats' hair dyed red."[1] The dress of the "Naked Nágá" of the present day is described in the late

A. C. R., 1891, p. 245.

[1] Sir J. Johnstone, "My Experiences in Manipur," 1896, p. 29.

Census Report as partly consisting of a broad strip of white bark bound tightly round the waist, a large tail of bark being often left hanging down behind.

G. H. Damant, "R. As. Soc. Journ.," vol. xii, n.s.

Among the Eastern Nágás in several tribes the women used no clothing, in others the men.

Woodthorpe, "Journ. Anthrop. Inst.," xi, p. 60.

A practical reason for the use of decorations, and hair, is given by Colonel Woodthorpe. Speaking possibly of the Angámi tribe he says:—"I need hardly remark that all Nágás' personal decorations have a defensive purpose in view, like our old military stocks and epaulettes, and are planned to ward off the spear or axe, while the long hair which is so profusely used, waving about with every movement of the wearer, distracts the eye of the foe levelling his spear at him, and disturbs the aim."

We have already seen instances of the use of tattoo to indicate tribal diversities, and as a record of prowess. The latter use is conspicuous among the "Naked Nágá" of the present day. Both men and women are tattooed, the women on the legs and breasts; the men on their chests, where each warrior keeps his record of heads in the shape of the figure of a man roughly tattooed for each head taken.

A. C. R., 1891, p. 245.

Brown, p. 39.

The practical use of tattoo is illustrated by the black tattoo among Luhupa women, which gave safety in feud. The tattoo was in simple patterns on the thighs, arms, and breast; "These women are much sought for by the southern men, because, however fierce may be their feuds, a tatooed woman always goes unscathed, fear of the dire vengeance which would be exacted by her northern relations were she injured giving her this immunity."[1]



EASTERN ANGÁMI (previously published in the "Journal of the Asiatic Society of Bengal," vol. xliv, 1).

[1] See Woodthorpe, "Journ. Anthrop. Inst.," p. 208, Plate XX, 2, *re* Nágá tattooing.

ANGÁMI NÁGÁS.

The Angámi Nágás are a race of active and warlike highlanders, dwelling in inaccessible hill villages, divided by internal feuds, and, till recently, "ready to raid indifferently upon neighbouring villages or upon British territory." The energy which characterises their warfare extends also to their trade, and has enabled them to perfect a system of hill cultivation superior to that of any neighbouring tribe.

Mackenzie, p. 101.

Butler, "Journ. Asiatic Soc. Bengal," vol. xliv, I, p. 308.

In 1875 Captain Butler wrote thus of the Angámi district. "This great division of the Nágá race occupies for the most part a charming country of fine, open, rolling hill and valley, bounded by lofty mountains, some of whose summits tower up to 9,000, 10,000 and even 12,000 feet above the sea-level. Their villages are generally placed on the more tabular hills of about 5,000 feet elevation, and enjoy a healthy bracing climate, subject to neither extreme heat, nor cold. This noble tract of country is blessed with a most fertile soil, well cultivated, drained and manured, and the hill sides are often covered, I might almost say for miles, with a succession of fine terraces of rich rice: and the hill tops are dotted over, as far as the eye can reach, with numerous large villages whose comparatively enormous population might even claim for them the right of being called towns. Thus Kohima for instance contains no less than eight hundred and sixty-five houses, or say a population of over four thousand souls."[1]

The Angámi Nágás are described by Colonel Woodthorpe as exhibiting a marked difference from all other Nágá tribes.[2]

A. C. R., 1891, p. 237.

The name Angámi is a corruption of the name by which they are known to the Manipuris, *Gnamei*; the name by which they call themselves is *Tengima*. The tribes are divided into three main divisions, the western Chakroma; the Tengima proper, who occupy the central portion of the country: and the Chakrima or Eastern Angámi. The differences between the two latter are "greater than those that exist between tribes that are really different, such as the Lhotás and Aos, and it is only by an examination of the

[1] Col. Woodthorpe, writing in 1882, gives Kohimah 900 houses.

[2] Woodthorpe. "Journ. Anthrop. Inst.," xi, p. 196. Compare p. 66. "At one village called Ungomah we came across some men who, though apparently Angamis in feature, build, architecture and mode of cultivating, yet wore the dress of, and spoke a dialect identical with the Schmahs, a neighbouring non-kilted tribe."

language spoken by Tengima and Chakrima that we find that they really belong to the same tribe."

The Angámi have no written character.[1]

Social structure—Exogamous Divisions.—The unit of Angámi society is not the village but the *khel*, composed of supposed descendants from a common ancestor, whose name the *khel* bears. These *khels* are exogamous, no man being allowed to marry a woman of his own *khel*. On the other hand certain of the funeral ceremonies are performed by members of some other *khel* than that of the dead man. Children belong to the *khel* of the father.[2]

A. C. R., 1891, pp. 238, 239.

The village is a group of many *khels*; in the village of Kohima seven *khels* exist. The village group appears to be the mere outcome of the need of common defence, since the *khels* composing it exist in a state of bitter feud. "Between the *khels* in the same village great rivalry exists, which in old days used to lead to blood feuds and frequent fighting, indeed, the inter-khel feuds were and are far more bitter than inter-village feuds."[3]

Ibid.

At the great drinking festivals, riots and free fights in which lives are occasionally lost, still result from the *inter-khel* feuds. Mr. Davis says, "I know of no Angámi village of any size which is not divided against itself by the bitter feuds which exist between its component parts"[4], and he cites an official report of 1876 in illustration of the lack of combination in an Angámi village. The extract is further of interest as showing the native attitude towards manslaughter: "A party of forty men of Mozema went over to Kohima, and were admitted by one of the *khels* friendly to them, living next to the Puchatsuma quarter, into which they passed and killed all they could find, viz., one man, five women, and twenty young children. *The people of the other khels made no effort to*

Ibid.

[1] Referring apparently to the Angámi tribe Captain Butler gives numerals up to 1,000; he says, "They have no names for the days of the week, and their year commences in March"; he gives names for twelve months. See linguistic section of his article called "Rough Notes on the Angami Nagas and their language." "Journal Asiatic Society of Bengal, 1875," xliv, I, pp. 333 *sqq*.

[2] The Khel is called by the Angámi themselves "tepfu" or "tino."

[3] See the Note by Mr. Davis, I.C.S., Deputy Commissioner of the Nágá Hills, Assam Census Report, 1891, p. 237 *sqq*., to which the following pages are greatly indebted.

[4] Speaking of Angámi villages Colonel Woodthorpe says, "Deep lanes and stone breast-works divide off the clans, of which there are frequently from two to eight in a village . . ." And again, "One marked peculiarity in their intestine feuds is that we so often find a village divided against itself, one clan being at deadly feud with another, whilst a third lives between them in a state of neutrality, and at perfect peace with both." "Journ. Anthrop. Inst.," xi, pp. 63; 67.

interfere, but stood looking on . . . One of the onlookers told me that he never saw such fine sport (*i.e.*, the killing of the children) for it was just like killing fowls."

Individual blood feuds were kept alive among the (Manipuri) Angámi by a custom by which men might be hired to carry on a quarrel, "when the male members of a family are either wanting or unable to do so."

Brown, 36.

Mills, p. cxlv.

An early report says, presumably speaking of the Angámi, that it was incumbent on a Nágá to recover or ransom the skull of a relative murdered or captured in war; to recover the skulls of their friends who had fallen in an attack made on their villages was considered a point of honour.

A. C. R., 1891, p. 238.

Village Government.—The description, in the late Census Report, of this strangely disintegrate village group makes no mention of any system of village government: and Mr. Davis speaks of united action by one village as an impossibility.

Mills.

Forty years ago, according to an official report, every Angámi village had a polity of its own. Each village community had one, or generally two, chiefs: the authority or title of the chief went by primogeniture, and the eldest son succeeded to the dignity even before the death of his father if the latter were very infirm. These chiefs, however, possessed no absolute power over the people. They collected no revenue, and they are described as having no power to enforce an unpopular measure, or alone to take cognizance of offences against the person or property of individuals.

All transactions of importance were settled, not by these nominal chiefs, but by an assemblage of the aged and warriors of the village; such an assembly would decide on the setting out on a predatory inroad, or on taking revenge on another village. A council of elders administered fines for thefts and other petty crimes.

The government was said to be decidedly democratical, a characteristic noted some years later as a bar to the exertion of external government influence over the villages.[1]

Stewart, p. 650.

The nominal hereditary chieftaincy is not mentioned by Stewart who says that "the Angámies have no recognised head or chief, although they elect a spokesman, who, to all intents and purposes is powerless and irresponsible . . ." He calls the spokesmen "Gaon Booras."

[1] Colonel Hopkinson, in 1866, pointed out that the "democratic nature of the tribal arrangements among the Angamis, the infinite divisions and disputes existing even in a single village, rendered it impossible to hope for success from the policy of conciliation *ab extra* proposed by the Government." Mackenzie, p. 118.

Ibid., p. 653. Possibly Stewart was not aware of the existence of the nominal chiefs, who do not appear to have held any prominent civil position. Captain Butler looked on the Angámi as possessing no "regular settled form of government," and adds "With them might is right, and this is the only form of law—or rather the absence of all law—heretofore recognised among them."[1] Colonel Woodthorpe, writing in 1882, speaks of the Angámi as nominally under the orders of village headmen, chosen for wealth courage etc.; but finds no effective authority among them. He adds "Theoretically, with the Angámi every man is his own master, and avenges his own quarrel." We must hope for fuller information as to the government of the village group, and the part played therein by the discordant *khels* of which it is composed.

Woodthorpe, "Journ. Anthrop. Inst.," xi, p. 68.

No central authority is recorded among the villages. An early Report notes that if any village decreased in numbers the larger villages at once insisted on annual tribute being paid to them, or otherwise they plundered and ruined it. A later writer, possibly speaking of the Angámi under Manipur rule, says that no central authority existed to whom the villages owed allegiance.

Mills.

Brown, p. 34.

Crime.—The Angámi social structure included decisive criminal rules. Murder admitted of no expiation, and instant death might be inflicted by the relatives of the murdered person, without reference to the council of elders, or even ten years after the deed the murderer might be surprised and killed; revenge for the death of a relative was considered "a sacred duty never to be neglected or forgotten." According to Colonel Woodthorpe, "it is an article of faith that blood once shed can never be expiated, except by the death of the murderer or some of his near relatives. . . ." An injured husband might also spear the offender on the first opportunity; punishment for the woman was in use among some, if not all of the Angámis.

Mills, p. cxlii.

Woodthorpe, "Journ. Anthrop. Inst.," xi, p. 67.

Brown.

Thefts and petty offences were disposed of by a council of elders, a fine being imposed, and restitution of the property or its equivalent. Capital punishment if a thief were caught in the act, or a house were broken into, has been noted among the Angámi.

Mills, and Brown.

Stewart describes the Angámi as expert thieves and glorying in the art, and adds that "theft is only dishonourable and obnoxious to punishment when discovered in

Stewart, p. 652.

[1] Butler, 1875. "Journ. As. Society, Bengal," xliv, I, p. 314.

the act. . . . ." Dr. Brown spoke of theft as not often committed by the (Manipuri) Angámi.

Marriage.—It will be seen that a prominent element in the elaborate Angámi marriage rites is the repeated eating together of the bride and bridegroom, that is of two members of different *khels*. This ceremony is repeated on three successive days, and on the third day offering of food is made to some deity before the eating together begins. It is perhaps noteworthy that on the first day of the ceremonies the members of the bride's *khel* are feasted presumably on meat and drink sent by the bridegroom's father. From what has been said of the bitter *inter-khel* feuds that prevail within the village "walls" the need of sealing the marriage bond by repeated performance of the great primitive contract of common eating is manifest.

The symbolic hoeing and cutting of firewood on the third day is noteworthy, as is the large part that omens play in the marriage customs.

Mills. An early account (1854) of Angámi marriage merely states that the girl's consent, as well as that of her parents was obtained by presents; and that the bridegroom feasted his friends on the marriage day, they in return assisting in the construction of a new house for the newly married couple. Colonel Woodthorpe quotes a statement that "marriage is usually solemnised by a large feast, and the bridegroom, when he can afford it, makes a present to the bride's parents" and that parents never attempted to positively control the choice of their sons and daughters. The following sketch of the modern marriage procedure in the village of Khonoma is taken from the "Note" by Mr. Davis, already referred to. In each village marriage customs vary slightly. As we have seen an Angámi wife must be sought amongst the women of a *khel* different from that of the man.[1] Having made his selection the Khonoma youth informs his father. The father sends a friend to interview the girl's parents, and if the reply is favourable the youth's father, on an auspicious day, takes omens. If the omens are unfavourable the negociations cease, if favourable the parents of the girl are informed of the fact. The girl's opinion is then asked, and if she dreams no unfavourable dream within the next three days, formal consent is given by her parents, and a day for the wed-

Woodthorpe, "Journ. Anthrop. Inst.," xi., p. 68.

A. C. R., 1891, p. 238.

A. C. R., 1891, p. 239.

[1] Sir J. Johnstone, under the heading of Angámi, says that no girl in the more powerful villages could marry a man unless he had won the right, by slaying an enemy, to wear the kilt ornamented with cowrie shells. Johnstone: "My Experiences in Manipur," 1896, p. 30.

ding is then fixed. On that day the bridegroom's father sends pigs, salt and liquor to the house of the bride's parents; the pigs are killed and a feast is given to the *khel* men and friends of the bride, who also take away small portions of meat wrapped in plantain leaves. The same night the bride, accompanied by many members of her own *khel*, goes to the house of the bridegroom's parents; she carries a little food, and those with her carry larger quantities. Then the bride and bridegroom eat some of the meat and drink some of the liquor brought by her. The bridegroom then returns to the young men's quarters, (the *dekha chang*), and the bride whose companions return, except two women and one man who remain with her, sleeps at the house of the bridegroom's father. On the second day the bride and bridegroom again eat together, the arrangements at night being repeated. On the morning of the third day the young couple go together to the bridegroom's cultivation the girl carrying liquor, food, and a hoe; the man only his spear. First the man and then the woman do a little hoeing. Then a little rice and liquor is placed on the ground "as an offering to the deity." They again eat and drink together. After this they return home, the man cutting on the way home a few sticks of firewood which are brought home by the woman. On her return the woman goes to her father's house, and brings thence to her husband's house liquor and cooked meat. A feast is then given to the neighbours and children. That night the two kill a fowl to see the omens. Then they wait "for another seven or eight days. At the expiration of this period the high priest of the *khel* is called in. He sacrifices a chicken, and the ceremony of marriage is complete." After the priest's sacrifice the two live together as man and wife.

The account given by Dr. Brown of (Manipuri) Angámi marriage rules differs somewhat from the above. He says that the first negociations for marriage were made by the father of the youth or girl. "In nearly all cases the wishes of the young people are first consulted." The father of the youth as a preliminary gave to the father of the girl a pig and a spear, but received nothing in return. On the wedding day bride and bridegroom paraded the village separately with gourds of liquor with which they treated the villagers. The bride then, accompanied by four or five female friends, proceeded to the bridegroom's house, where she regaled them with fowls. This completed the ceremony. The bridegroom continued to sleep with the young men for a year after marriage; the reason given was that the wife's hair might grow before she had a child (unmarried girls shaved the head)

Brown, p. 35.

"as having children before the hair is long enough to tie behind is considered amongst them to be reproach."

Among the (Manipuri) Angámi women the marriage tie was seldom broken, according to Dr. Brown.

Divorce.—Divorce is said to be frequent at the present day among the Angámi, and to occur from various reasons, including incompatibility of temper. The compensation to the husband or to the wife varies with the cause of divorce. Writing in 1882 Colonel Woodthorpe quotes a statement according to which:—"Marriage and divorce are among the simplest of their rites and often follow each other within the year without comment or surprise . . . . Divorce necessitates a division of all property held in common, such as grain, household furniture, etc., and all property derived since the two became man and wife. In any division thus made the late wife, or divorcée, gets one-third whilst the man gets the remainder, and the woman then returns to her parents or lives apart in a separate house until she marries again." Twenty years ago the (Manipuri) Angámis were described by Dr. Brown as but rarely resorting to divorce.[1]

A. C. R., 1891, p. 239.

Woodthorpe, "Journ. Anthrop. Inst.," p. 68.

Brown, p. 35.

According to the recent account of the Angámis divorced women, women who have left their husbands, and widows without children, return to their fathers' houses, and can remarry at pleasure. "Widows with children are not supposed to remarry, having to devote themselves to the bringing up of their children."

A. C. R., 1891, p. 239.

From the old Report of 1854 we find that a divorced woman might live in a house by herself and not return to her parents and could marry again; but this is not given as applying to all divorces.

Polygamy.—The Angámis do not practise polygamy. Colonel Woodthorpe quotes a statement that:—"Although strictly monogamous" both sexes might marry and re-marry as often as they pleased; children requiring the mother followed her till able to look after themselves when they returned to their father. In the Report of 1854, it is stated that a woman might live with a man without being married and leave him for another, but that in this case the children remained with the father. Among the Angámi described by Dr. Brown the custom prevailed of a widow marrying her deceased husband's brother. We may note that the Angámis, according to Colonel Wood-

A. C. R., 1891.

Woodthorpe, "Journ. Anthrop. Inst.," p. 68.

Brown, p. 35.

[1] Dr. Brown says further that divorce by mutual consent was easily arranged, the woman taking her property. A man might put away his wife with or without her consent. Brown, p. 35.

thorpe's paper, might marry their deceased wife's sisters, and their brothers' widows.

A. C. R., 1891. Children as we have seen now take the caste of the father, *i.e.*, belong to his *khel*. Cousins were forbidden to intermarry.[1]

Brown, p. 34. Among the (Manipuri) Angámi the custom was in use by which the young men slept in a house or houses apart, a custom continued for one year after marriage; but the "dekhi chang" which has been noticed among other Nágás for the girls to sleep in, does not appear to have been universal even if it were known at all, among these Angámi. Their morality does not appear to have always been high.

Woodthorpe, "Journ. Anthrop. Inst.," xi, p. 61. *Position of Woman.*—It is interesting to note that—"All the weaving, a good deal of the work in the field, such as preparing the soil, etc., carrying wood, and pounding rice, is done by the women. In fact, women's rights are fully recognised, the men doing very little besides drinking and fighting."

A. C. R., 1891, p. 240. *Inheritance and Property.*—The Angámi of the Nágá Hills District possess separate property. Daughters do not, except in certain villages, inherit, unless a bequest is made to them by word of mouth. Among certain of the Eastern Angámi villages daughters receive a share of their father's property, but it is not clear whether the statement refers to receipt on marriage, or at the father's death. The sons, as they marry, receive their share of the father's landed property, leaving the paternal mansion and building houses of their own. "The youngest son, therefore, in practice nearly always inherits his father's house." Should a man die leaving several unmarried sons, these all receive equal shares. Should a man die leaving no male heirs his property is as a rule divided among his nearest male relations. "In the case of a married woman, possessed of property in land in her own right, dying without children, her property would, if not sold to meet her funeral expenses, revert to her nearest male relations."

It is hardly necessary to point out the interest of the recognition by the Angámi of the Nágá Hills district, of rights of individuals to property in land, including even the case of a married woman's possession of landed property in her own right; and that the partition of landed property is settled by known custom.

Woodthorpe, "Journ. Anthrop. Inst.," xi, p. 68. The following note as to inheritance is quoted by Colonel Woodthorpe:—"On the death of the father, all property, excepting the house, is divided equally among all the sons alone, the youngest always

[1] See Woodthorpe, "Journ. Anthrop. Inst.," xi, p. 68.

receiving the house in addition to his share of the whole. Neither the widow nor daughters have any claim to aught except their clothes and ornaments, but they are generally supported by their sons or brothers until death or marriage."

A. C. R., 1891, p. 250. Land is freely bought and sold by the Angamis of this District, especially permanent terraced cultivation.

The strong feeling of the Nágás of Konemah, and others, for their lands is seen in the impossibility of getting these dispossessed clans to settle on other land, offered them, after the Nágá war of 1879-80; they could not be persuaded to occupy other sites and before their return was permitted to the confiscated lands they had, except in occasional instances, for the most part been receiving such shelter and livelihood as they could obtain from the villages in the neighbourhood of their old homes.

Mackenzie, p. 139.

Religion.—We have but very inadequate accounts of the religious usage and belief of the Angámi.

Beliefs.—They are now said to recognise a supreme creator named Terhopfo or Kepenopfo. Dr. Brown, writing twenty years ago and possibly speaking only of the Manipur Angámis says that they believed in a supreme deity of a benevolent disposition, who inhabited the inaccessible heights of the highest hills. These statements are corroborated by the authority of the late Sir James Johnstone:—"The Angámis, in common with most hill-tribes that I have come across, have a vague indefinite belief in a supreme being, but look on him as too great and good to injure them."[1] No supreme individual is distinguished among the various gods spoken of in the Report of 1854, but some chief deity may be indicated in the following yearly festival:—"In January on the full moon the wealthy slaughter cows as a sacrifice to the great god, give a grand feast to their friends, entreat the god to protect them, and to prosper all their undertakings and it is a season of general rejoicing." The same early report shows us the intimate part the gods or spirits played in the daily life of the Angámi:—"They imagine there are many gods or good and evil spirits residing in their hills; to one, they offer up sacrifices of cows and mithuns, to another, dogs, and to a third cocks, and spirituous liquor, each god or spirit having in their estimation the power to afflict them with sickness,

A. C. R., 1891, p. 241.

Johnstone, p. 32.

Mills, p. cxliv.

Mills, p. cxlii.

[1] See *supra*, p. 186, Note 2, on possible Vaishnava influence in any Nágá belief in a single supreme deity.

ill-luck and a variety of calamities, or to make them successful in their incursions and prosperous in their undertakings or daily occupations."

A belief in evil spirits residing in rocks, trees, and pools of water has been recently recorded. A. C. R., 1891, p. 241.

Sacrifice in sickness, etc.—It is hardly necessary to say that sickness was ascribed to direct spiritual agency, and treated accordingly. To quote again from the Report of 1854:—"If a man falls sick, the chief person in the house or family sacrifices a fowl and places the entrails and feathers in the road in the evening and calls out to the spirit, O! spirit restore to health the person you have afflicted in my family, I offer you the entrails of a fowl, saying this he returns to his house and takes the fowl's head and legs, and gives it to some other family, and the remainder is eaten at home. If the sickness is very severe, a person takes a fowl and goes into the jungle and leaves the fowl alive as an offering to the living spirit. If it be to the invisible Hossung spirit then he kills the fowl and leaves it in the jungle, . . ." We should be glad to know more of this "invisible Hossung spirit," and to know why it is specially characterised as invisible. The *evening* rite is noteworthy. The Report proceeds to state that if cows or pigs were killed by tigers, or if they died off suddenly, they would take an egg and go to the spot on which the cow was killed, and place the egg on the spot, and say, "O! spirit do not we entreat you, kill our cattle from to-day; this is not your residence, your abode is in the woods, depart hence from this day, . . ." Saying this they returned home and made it a day of rest. If cattle accidentally wounded themselves "that day also is one of rest"; and if cattle died suddenly the whole village community remained at home. In all calamities the usual avocations were not thought of.[1] The latest account of the people adds pigs and cattle to the propitiations offered in sickness.[2] Before leaving the subject of sacrifice we may re-

Mills, p. cxliii.

Ibid.

A. C. R., 1891.

[1] The official punctuation of the Report used above is so obscure that it may be well to give the passage verbatim. "If cows or pigs be killed by tigers, or if they die off suddenly on that day, they take an egg and go to the spot on which the cow was killed and place the egg on the spot and say, O! spirit do not we entreat you, kill our cattle from to-day; this is not your residence, your abode is in the woods, depart hence from this day, saying this they return home, it is a day of rest and if cattle die suddenly or if they accidentally wound themselves, that day also is one of rest, and in the former case the whole village community remain at home in all calamities, the usual avocations are not thought of." Mills, p. cxliii.

[2] The (Manipuri) Angámis were said in 1873 to have no knowledge of medicine, and to employ sacrifices in cases of sickness. Brown, p. 37.

call that the long ceremonies of the Angámi marriage are not completed until sacrifice has been made by the "high priest of the khel"; and it may be noted that portions of cow's liver are solemnly thrown out of the house during the funeral rites, though this may of course be merely an offering to the dead man's spirit.

After noticing the Angámi belief in a supreme being Sir J. Johnstone adds, "They believe themselves also to be subject to the influence of evil spirits, whom it is their constant endeavour to appease by sacrifices. Every misfortune is, as a rule, ascribed to evil spirits, and much money is spent on appeasing them, the usual way being to offer fowls, of which the head, feet, and entrails are offered to the demon, with many incantations. The other parts are eaten by the sacrificer." I should like further evidence that the designations of *evil* spirits, and *demon*, convey the ideas held by the people. The sacrificial rite where the sacrifice is shared between the spirit and the sacrificer looks like the common mode of creating a bond by means of eating together.

Johnstone, p. 32.

The huge monoliths, the long rows of which are described as so noticeable among the hills, seem to betray some religious ritual of installation. According to Colonel Woodthorpe's account after the stone slid into position "some leaves are then placed on the top, and some liquor poured on them: this done, a general feast follows. . . ." These acts completed the ceremony. The monoliths are stated by Colonel Woodthorpe to have been 'either monumental or simply commemorative of some big feast given by a rich man."

Woodthorpe, "Journ. Anthrop. Inst.," xi, p. 65.

Festivals.—More knowledge of the Angámi festivals is as much to be desired as of their individual beliefs. We are told that many minor festivals are celebrated during the year, the chief of which is that held just before the new paddy harvest begins. Besides these, two main village festivals are described, *i.e.*, those celebrated at the beginning and end of the year's agricultural work. The *Sekrengi* festival is held shortly before the new year's work in the fields is begun; dogs are killed and eaten in great numbers, the reason for which Mr. Davis could not discover; both this and the following (*Terhengi*) festival last ten days, and both include unlimited consumption of food and drink. "The Terhengi is celebrated within a short time of the completion of the harvest, and is in fact the 'Harvest Home' festival. . . . During the Terhengi are given most of those big feeds which wealthy Nágás give, in the not vain hope of

A. C. R., 1891, p. 241.

handing down their names to future generations." At the ceremony of pounding rice beforehand for such a feast the whole of the adult males of the host's *khel* assist. To commemorate these feasts huge stones are dragged often for long distances and are erected by the side of the road near the village. The giver of the feast also becomes entitled to put up over his house huge wooden horns.

We have already noted the reference in the Report of 1854 to sacrifice feasting and rejoicing at the full moon of January; this January festival may I imagine be coincident with the Sekrengi, or one of the "minor festivals" mentioned in the Census Report of 1891.

Dr. Brown, referring to the Manipuri Angámi, mentions August and September as the months for the chief festivals, and notes that the women did not join in the festival dances.

Priesthood.—We have the merest indications as to the Angámi priesthood. The account previously quoted of the Manipuri Angámi says that the village priests were similar to those of another tribe, who were non-hereditary, were not held in much veneration, directed the sacrifices, and performed the ceremonies for the recovery of the sick. The mention in the description of marriage procedure quoted above of the "high-priest of the *khel*" indicates some order of priests; we must hope for further information on this point.

Brown, p. 36.

Brown, p. 28.

Taboo.—A taboo is described in some detail by Captain Butler apparently with reference to the Angámi. He says, "This tabú [*i.e.*, the custom "of '*kénnié*,' corrupted by the Asamese into '*génna*,' a description of tabú singularly similar to that in vogue among the savages inhabiting the Pacific Islands"] is declared upon every conceivable occasion, thus at the birth of a child, or on the death of any individual, the house is tabúed, generally for the space of five days, and no one is allowed to go in or out except the people of the house. Again, any accidental death, or fire in the village, puts the whole village under the ban. In like manner before commencing either to sow or to reap, an universal tabú has to be undergone, and is accompanied by propitiatory offerings to their[1] several deities, and no man dare commence work before. If their crops have been suffering from the attacks of wild animals, a 'kénnié' is the remedy,—in fact there is no end to the reasons on which a 'kénnié' must

Butler, 1875, "Journ. As. Soc., Bengal," xliv, I, p. 316.

[1] ? Angámi.

or may be declared, and as it consists of a general holiday when no work is done, this Angámi sabbath appears to be rather a popular institution."[1]

Brown, p. 34.

The usual ceremonial taboo was enforced by the Manipuri Angámi at the birth of a child, but no special festival appears to have been held. The mother was carefully secluded in her house, alone with the child, for five days, during which time she was fed only on fowls: "The meaning of this seems to be that the woman and all her surroundings are unclean." After the five days had elapsed all the woman's clothes were washed, and the clay pots used by her for cooking since her confinement were thrown away. She was then allowed to mix as before with the villagers, who made her small presents of food, drink, etc.

Funeral rites—burial.—It remains to notice Angámi funeral rites and usages, and the beliefs held concerning the after-world. The report of 1854 gives a vivid picture of the wild rites then celebrated. The fighting nature of the Angámi not only defied men, but challenged at the dead man's grave the hostile spirit to whom death was attributed. When a man of any standing died in the village, none of the inhabitants quitted it for three days; during this time the body was kept in the house. Then, after a feast to the whole community, the body was taken to the burying ground and interred, and a stone tomb, three or four feet high, was built over the grave; "and all the men being dressed in their war habiliments make a great noise, and jump about and say what spirit has come and killed our friend, where have you fled to, come let us see you, how powerful you are, if we could see you we would spear you and kill you with these spears, and with similar vociferous speeches and war whoops continually repeated, they curse the spirit and strike the earth with their spears and swords[2]..." Then they placed on the grave all the articles of dress worn by the dead, as well as his arms, clothes, bamboo spirit cup, spirit gourd bottle, shell and cane ornaments, and the Dhoones feathers worn in the head. On a woman's grave were placed her clothes, ornaments and necklaces, spirit gourd bottle, weaving shuttle, spinning stick for cotton, cotton thread, dhan, grain, and pestle and mortar for clearing rice. The skulls of pigs and cows were likewise stuck up on sticks at one end of the grave, "in memory of the deceased's hospitality."

Mills, p. cxliii.

Later accounts take no note of this defiance of death, or of

[1] See Woodthorpe, "Journ. Anthrop. Inst.," xi, p. 71, citing the same or a similar Angami taboo.

[2] "Doas" according to a footnote.

the three days' seclusion imposed on the community. We are indebted to Mr. Davis for the following note of the rites now practised on the death of an Angámi. The part played by members of a *khel* different to that of the dead man seems an interesting feature of the modern ceremony. The funeral always takes place the evening after a man's death. The body is covered with a white cloth and a basket containing dhan, konidhan, job's-tears, yams, Indian corn, and garlic, is placed by its side. An old man of the deceased's *khel* kills the cows for the funeral feast early in the morning. "The livers, heads, and certain portions of the meat having been set apart, the rest is distributed amongst the family members, relations, and friends of deceased, portions being often sent to intimate friends residing in other villages." The father-in-law of the deceased, if there be one, if not some friend from another *khel*, enters the house, and standing on the left hand places a plain spear on the right hand side of the body; in the case of a woman a black cloth replaces the spear. He then cuts off a small lock of the dead man's hair. The coffin is then brought into the house, and a wisp of thatching-grass is burnt inside it. Beside the body, in the coffin, a fire-stick and some weapons are placed. The coffin is then brought out for burial; the grave is usually dug close to the deceased's house. On the day after the funeral the friends and relations of the deceased, together with one man of another *khel*, go to the deceased's house, and there eat the meat of the heads of the cows and the other reserved portions, except the livers. The skulls are then fixed up over the grave, together with a shield, spear, and ornaments, such as cane leggings, etc., worn by the dead man. In the case of a woman her basket, weaving sticks, etc., are placed over the grave. Food is then again partaken of at the deceased's house, and the members of another *khel* who are present cook the livers of the cows set apart for this purpose. When cooked a piece of liver, with salt and chillies, is given to each member of the deceased's family, who in perfect silence throw each his piece out of the house to a distance of eight or nine paces. This ceremony being completed all those present return to their homes. On the second day after the funeral seventeen portions of cooked rice with a little salt are tied in plantain leaves. These are buried outside the house on the fourth day. On the fifth day from the funeral the wooden platter and drinking cup of the deceased are hung up by a string inside the house. At the expiration of thirty days this string is undone and thrown away, and the platter and cup are given to a friend of the deceased. "About the fortieth day deceased's family sacrifice

A. C. R., 1891. pp. 240–1.

a cock, the flesh being eaten equally by all." The funeral ceremonies are then complete. The bodies of women dying in child-birth are taken out through the back of the house, and buried without any ceremony whatever. Very young children are usually buried inside the house.[1]

Woodthorpe, "Journ. Anthrop. Inst.," xi, p. 65.

We owe to Colonel Woodthorpe a description of the carved wooden effigies of the dead placed above graves; and an illustration of one of these effigies. In view of the interest attaching to such effigies I venture to recall this description at length. "Sometimes these are executed with much skill; two we saw at Kohimah, having the wrists and elbow-joints indicated, with emerald beetle's wings as eyes, and a row of white seeds for teeth. They were clad in all the garments of the deceased with their shields fixed on the left side, two imitation bamboo spears standing on the right, as it is not safe to leave the real spears there. In some cases the image consists simply of a wooden post with a rudely carved bust of the deceased at the top, two or three rows of heads in slight relief beneath, proclaiming the number of foemen slaughtered in life A curious circumstance connected with these figures is that, though in life the large conch shell is always worn on the back, in these effigies it is as invariably carved on the breast. No reason could be assigned by the Nágás [? Angámi Nágás] for this."

We have the following note regarding the next world of the Manipuri Angámi:—"After death they go to another world; at the entrance they are met by a door-keeper; should the soul be that of a man who has been a great warrior, hunter or snake-killer, then he is received courteously; if not, small notice is taken of him. Like the Kowpoi [Kabui, a Kuki or Nágá tribe] idea, they here live their lives over again, and are afterwards born again into the world: this goes on seven times, when they are finally changed into insects,

Brown, p. 36.

[1] Mr. Davis quotes an undated account of an Angámi funeral which recalls the would-be attack on the death spirit of the early record; the women are described as slapping the ground with their cloths before the lowering of the coffin; apparently the following was addressed to the dead, "Do not be afraid; do not mourn. You have only followed your parents' custom. Although you have died, let us remain happy. Although God (*sic*) has not been kind to you, and you have died, fear not!" Large flat stones formed the coffin lid, the crevices being carefully filled up with rubble; before the earth was filled in a large basketful of dhan, konidhan, dhall, and job's-tears was thrown into the grave.

An account of 1873 of Manipuri Angámi funeral custom describes the feast as only prepared for the family and friends of the dead; burial took place on the day of the death; a chicken, and weapons were buried in the grave, and the ornaments were not removed from the body; an upright stone was afterwards placed on the grave. (Brown, p. 35.)

especially butterflies; some species of which, on this account, they carefully refrain from injuring."

What looks like an interesting case of adoption of external ideas by members of a savage race is recorded by Captain Butler, referring apparently to the Angámi Nágás:—"Some have told me that they believe that if they have . . . . led good and worthy lives upon this earth, and abstained from all coarse food, and especially have abstained from eating flesh, after death their spirits would fly away into the realms above, and there become stars, but that otherwise their bodies would have to pass through seven stages of spirit-life, and eventually become transformed into bees . . ." Captain Butler adds " . . . others again, on my questioning them, have replied with a puzzled and surprised air, as if they had never given the matter a thought before, that 'after death we are buried in the earth and our bodies rot there, and there is an end: who knows more?' Still from the fact that they invariably bury the deceased's best clothes, his spear and dáo, together with much grain, liquor, and a fowl, with the body, I think we may safely infer that they certainly have some vague idea of a life hereafter, the thought of which, however, does not trouble them much."[1]

Mr. Davis speaks of ignorance among the Nágá of their future state; possibly the enquiries did not elicit the beliefs of the people. Different accounts concur in the absence of apparent ideas of varying treatment for the good and bad, to which it may be suggested that to the savage mind courage in war, skill in the chase, and the freeing of land from snakes, may be no mean virtues.[2]

Mills. Brown.

Myths.—An Angámi story of origin is as follows:—"There is a jheel situated in the Angámi country; from this jheel three men emerged, one remained in the country and became an Angámi, one went towards North Kachar, and the remaining one towards Manipur. Thus were formed three tribes of hill-men, Kacharima, Angámi and Mow."[3]

Oaths.—The Angámi forms of oath described in the Report of 1854, are interesting. When swearing to keep the peace or to perform any promise they placed the barrel of a gun or spear between their teeth, signifying by this ceremony that if they did not act up to their agreements they were prepared to fall by either of the two weapons. Another oath, equally binding, was for two parties to take hold

Mills, p. cxliv.

[1] Butler, 1875, "Journ. As. Soc. Bengal," xliv, I. p. 315.

[2] Captain Butler observes "On the subject of religion and a future state the Angámi appears to have no definite ideas." "Journ. As. Soc., Bengal," xliv, I, p. 315.

[3] Brown, p. 33, perhaps referring only to Manipuri Angámi.

of the ends of a piece of spear iron, and to have it cut into two pieces, leaving a bit in the hand of each party. The most sacred oath, it was said, was for each party to take a fowl, one the head and the other the legs, and in this manner to pull it asunder, intimating that treachery or breach of agreement would merit the same treatment. Also they erected a large stone as a monument on the occasion of taking an oath, and said. "As long as this stone stands on the earth no differences shall occur between us." From a paper by Colonel Woodthorpe we learn that the commonest and most sacred form of oath is for the two parties to lay hold of a dog or fowl while the creature is cut in two with a dâo "emblematic of the perjurer's fate."

Woodthorpe, 1882, "Journ. Anthrop. Inst.," xi, p. 71.

Omens.—All business or undertakings of importance, according to the same Report, were decided by consulting omens. To ascertain whether an incursion on a neighbouring tribe would be successful a soft reed was sliced; "if the slices fall of one side or one upon the other success is certain, if on the reverse quarter or scattered, it is ominous in proportion to the number of pieces that have fallen." The flight of a cock if strong and far was auspicious; if short and weakly, ill luck would inevitably attend any hostile expedition. If a deer crossed the path of an expedition when starting, an immediate return home was made, and the undertaking was postponed. "Omens," Colonel Woodthorpe writes, "are consulted on all occasions of importance, and determine the cause (*sic*) of conduct of the enquirers." He mentions an omen taken from the way a fowl's legs lie after being throttled: and the lucky or unlucky hearing of certain bird's songs; in each case the point depended on the right and left hand.

Mills, p. cxliv.

Woodthorpe, "Journ. Anthrop. Inst.," xi, p. 70.

Cultivation.—The Angámi rice cultivation is distinguished by the use of irrigated terraces, cultivated year after year. The terraces are skilfully excavated from the hill sides, and watered by means of channels. The western portion of the Angámi raise their rice crops by the system already described, known as *jhúming*. Mr. Davis thinks this terraced cultivation gradually spread northwards from Manipur till it reached the Angámi, who adopted it.

A. C. R., 1891, pp. 237-8.

When the Report of 1854 was written the Angámi were described as cultivating the land roughly, having no idea of ploughing and often working with a crooked stick in lieu of a hoe; the hills were then cultivated from base to summit in terraces. They were also said to be somewhat addicted to the "Lotah" Nágá custom of cutting off the heads, hands, and feet of anyone they could meet with,

Mills, cxlv.

without provocation or pre-existent enmity, in order to stick them up in their fields to ensure a good crop of grain.[1]

Woodthorpe, "Journ. Anthrop. Inst.," xi, p. 62.

Colonel Woodthorpe has described the Angámi cultivated terraces as "constructed with wonderful care and skill in the valleys and on the hill sides, ascending the latter for upwards of 1,000 feet, each little field having its own retaining wall of stone 5 or 6 feet high."

The soil in the terraced fields was manured, and the rice was sown in March, transplanted in June and reaped in October.

Ibid.

Cultivation Colonel Woodthorpe adds was also carried on on the natural slope of the hill.

Grain was stored in the front room of the houses, in huge bamboo baskets, from 5 to 10 feet high and about 5 feet in diameter.

Butler, "Journ. As. Soc., Bengal," xliv, I, p. 324.

The Angámi, Captain Butler tells us, bred cows "of a far superior kind to those met with in Asám," pigs, goats, dogs, and fowls; for food, sale, and barter.

War.—The Angámi habit of fighting has been already indicated. Their method of warfare is vividly described in the Report of 1854. Warriors carried sword, spear and panjies, viz., wooden spikes for sticking in the ground, and a shield from the centre of which hung locks of the hair of those killed in action. Before setting out on a war expedition all would assemble together, and decide on the village to be attacked, and the chief appointed to command. If the usual omens proved propitious when consulted, a fowl would be killed and partaken of by all. Then, after a night ambush, they would rush in on the chosen village at break of day, with a great noise, spearing the first they met with. The heads, hands and feet of their enemies would be taken home, "when they take the skulls to each house in the village, and throw rice and spirits over them, and tell the skulls to call their relatives, and he who has cut off the head, keeps it under his bedstead five days, during that time the warriors eat no food cooked by women and do not cook in their accustomed cooking pots, and neither do the warriors have any communication with their wives during the five days; but after the fifth day the heads or skulls are buried and a great feast is given of pigs and cows, afterwards they bathe and return to their avocations." The taboo on the warriors is of interest.

Mills, cxlii–iii.

[1] Mills, p. cxlv. Dr. Brown (1873) notes the prevalence among the Manipuri Angámi of terrace cultivation for the rice crop. Jhúming he describes as the exception rather than the rule.

The curious rite of throwing rice and spirits over the heads of the slain recalls a Kuki usage of a kind of covenant of eating between the slain and the victors, accompanied by an address to the head invoking a like fate for the dead person's kinsmen. Such a covenant, with the express object of preventing the disembodied spirits from haunting the victors and that they might travel in peace to the land of the dead, was performed by Kuki or neighbouring tribes after a raid of 1881–2. The keeping the head under the bedstead may perhaps be explained by the Kuki belief that all enemies whose heads are placed under the body before burial, or possibly the heads become, in another world, the property of the deceased.

Among the Manipuri Angámi the custom was not infrequent of giving warning to the opposite village before the attack, but without naming the time. "When peace is desired, one man from either side meet and exchange spears and drink together, a fowl is killed when peace is finally concluded." The heads of the slain were buried outside the victorious village, unless the headman of a village were killed, when his head would be left in the house of the opposing headman.

Brown, 35.

The incessant state of war existing among the Angámi did not always mean entire severance of the hostile communities. However fiercely a feud might be raging among the men of the Angámi village, Stewart says that the women of the contending parties visited one another without fear of violence. That this rule cannot have always obtained is shown by the story given above of a raid on Kohima. In the Report of 1854 the Angámi are described as "addicted to predatory cruel inroads for plunder, and to capture slaves to be redeemed"; the inhabitants of a raided village would be carried off into captivity until ransomed by their friends. Two means of reconciliation between hostile parties are mentioned. Among the (Manipuri) Angámi so long as the heads of one village were kept by the opposite party the feud remained active: the surrender of the heads, or rather skulls, ended the quarrel for the time. Peace was also possible, according to Sir J. Johnstone, when each party in a blood feud had suffered equal loss: "until each of the opposing parties had lost an equal number, peace was impossible. . . ." The necessity to go on fighting till an even balance was arrived at obviously tended to indefinitely delay a reconciliation.

Stewart.

Mills, p. clxii.

p. clxv.

Brown, p. 36.

Johnstone (Manipur), p. 29.

The only national offensive weapons of the Angámi, according

to Captain Butler, were the spear and dáo;[1] referring apparently to the Angámi spear he adds, "Its shaft is generally from 4 to 5 feet in length, and is usually very picturesquely ornamented with scarlet goat's hair, here and there intermingled with a peculiar pattern of black and white hair; sometimes, though rarely, the whole shaft is beautifully worked over with scarlet and yellow cane. . . . ." Warriors going out to fight often wore a large coronet of long bear's hair, giving them "a very formidable appearance." The fronts of the shields were decorated with pieces of bearskin cut so as to represent human heads. "These represent the heads of men slain in battle by the warrior behind the shield, and are supposed to intimidate the foe who looks on them."

Butler, 1875. "Journ. R. As. Soc., Bengal," xliv. I, p. 322.

Woodthorpe, "Journ. Anthrop. Inst.," xi. p. 62.

Any account of Angámi warfare would be very incomplete which took no note of their power of resistance to trained troops, and their capacities for service with them. It was found that, being soldiers both by nature and taste, they evinced the greatest eagerness to enter the English service: the young men of the tribe recruited for a local militia, displaying great pride in their arms and profession. In 1855 it was stated that "any number of the tribe could now be enlisted so great is their desire for service."

It was at the Angámi fortified village of Konemah that Mr. G. H. Damant, Deputy Commissioner of the Nágá Hills, was killed; and in the subsequent expedition Angámi fighting powers were proved. Konemah, "which was by nature very strong, had been fortified with immense labour and skill, and was deemed by the Nágás impregnable. The assault lasted all day, and at nightfall only the lower portion of the village had been captured, after the severest fighting ever known in these hills. In the night, the Nágás evacuated the upper works, and on the following day the British force occupied the position . . ." The storming party of Ghoorkas lost one quarter of their number. Lieut. Henderson, of the 44th Ghoorkas, described the Konemah forts as built on terraces one above and commanding the other. Each terrace was about fifteen feet higher than the terrace beneath, till the summit of the hill was reached, whence the terraces in successive steps led down the reverse slope. Each was surrounded by a high stone wall with a tower in the centre.[2] In the Gazette subsequently

Mackenzie, p. 137.

[1] According to Col. Woodthorpe the only indigenous weapons of offence among the Angámi were spears. "Journ. Anthrop. Inst.," xi, p. 61.

[2] See Lieut. R. G. Henderson, 44th Ghoorkas, "The Graphic," April 3rd, 1880.

issued the Commander-in-Chief expressed his sense of the capture of Khonoma being "well worthy of a prominent place in the long list of gallant deeds performed by the Native Army in India."

Trade.—The energetic Angámi character has found vent in much trading activity. Forty years ago the people were described as very intelligent and exceedingly anxious for traffic and gain. In 1879 Sir Steuart Bayley remarked that the Angámi were "sufficiently civilised to deal in counterfeit coin and spurious gunpowder"; "on visiting Teruphima, a distant Sema village, about sixty half-anna and one-pice pieces whitened with quick-silver," Mr. Damant had reported, "were brought to me by the innocent Semas, who complained that they were turning brown; I found they had been passed as rupees and eight anna pieces by some Nágás of Kohima, who will be arrested before long. I afterwards found that the same imposition had been practised on a distant Angámi village. . . . In another instance an Angámi sold another a quantity of powdered charcoal for gunpowder". Early accounts record the Angámi trading capacity. In the Report of 1854 it was said that "a vast change has however come over the Angamee Nagas within the last eight years. . . . Formerly they did not know the use or value of money, now many are become expert traders . . . desirous of proceeding on to Calcutta to purchase cornelian beads and muskets. . . ." Two years later Lieut. Stewart describes many Angámis as reaching the marts in Kachar and Assam, some proceeding as far as Gowhatti, Sylhet and Dacca; and some as penetrating to Calcutta in pursuit of trade.

Mackenzie, 113.

G. H. Damant, "Administration Report on Nágá Hills," 1878–9, § 72-73.

Mills, p. clxii.

Stewart.

Villages.—The villages in the Nágá Hills district are described in the Census Report for 1891 as permanent, and generally large,[1] and as a rule strongly situated on the tops of hills; the houses are built close together, with little arrangement; and the whole is surrounded by an almost impenetrable fence of some thorny shrub and huge stinging nettles. The approaches to the village are by narrow sunken paths, the entrance to the actual site being guarded by a strong wooden door now-a-days rarely or never shut. Forty years ago the villages were described as generally built on the most inaccessible peaks of the highest hills; every side was stockaded, and the sloping side was sometimes cut into a perpendicular wall. The gable-

A. C. R., 1891, p. 238 and p. 250.

Mills.

[1] The (Manipuri) Angámi villages were described in 1873 as permanent, and as occasionally containing 1,000 houses. Brown, p. 34.

end houses had grass and bamboo roofs coming down to within a foot of the ground, and were generally divided into two rooms. The houses, though irregularly built, were generally in two lines.[1]

The Eastern Angámi houses are described by Colonel Woodthorpe as ornamented in black maroon and white, concentric circles being the favourite design.

The following house decoration may deserve notice: "At Razami, Thetcholumi, etc., the fronts of the houses are almost covered with a number of dolls about a foot long, of wood or clay, dressed as Angámi men and women, and suspended by the armpits. Imitation spears and shields, corresponding to the size of the dolls, are interspersed among them, and also rows of small clay cows."

Woodthorpe, "Journ. Anthrop. Ins.," xi, p. 66.

Two points may be specially noted in Colonel Woodthorpe's description of Angámi houses, etc.: "The gable in front is in the houses of men of wealth and position decorated with broad handsome weather-boards terminating above the ridge in a pair of ornamental horns"; and front walls (or perhaps the houses, the passage is not clear) "are often covered with huge bas-reliefs of metua heads and horns."

Ibid., p. 64.

The roads in the higher hills showed considerable skill, easy gradients being made in the more precipitous places.

Ibid., p. 63.

Dress, etc.—The dress of the Angámi consisted of a blue or black kilt "prettily ornamented with cowrie shells," and a coarse black cloth made of nettle bark loosely thrown over the shoulders. Colonel Woodthorpe divides the Nágás, speaking generally, into the two sections of kilted and non-kilted, placing in the first class "all the so-called Angámis." If a man had killed another in war he would have three or four rows of cowries round the kilt, and was entitled to stick in his hair one feather of the "Dhoones" bird for every man killed; after death these feathers it will be remembered were placed on the grave together with other property of the dead man.[2] A warrior wore a collar, reaching to the waist,

Mills, p. cxlii.

[1] Sir W. W. Hunter describes the Angámi villages as strongly fortified, the defences including massive stone walls; the approaches are he says tortuous covered ways admitting one person at a time, leading to gates where a sentry watches day and night in times of feud. "Very often . . . the only means of entry into a village is by means of a ladder consisting of a single pole, some 15 or 20 feet high, cut into steps." Often each house would be surrounded by a stone wall. Hunter; "Statistical Account of Assam," II, p. 183. We may refer to Colonel Woodthorpe, "Journ. Anthrop. Inst.," xi. p. 63, concerning Angámi villages.

[2] "For very conspicuous bravery the right is conferred to wear in their headdress the long tail feathers . . . of one of the many kinds of the large

made of goat's hair, dyed red, intermixed with long flowing locks of hair of the persons he had killed, ornamented with cowrie shells. No one was entitled to wear this insignia of honour unless he had killed many of his enemies and brought home their heads.[1] Sir James Johnstone in his recent work says that the Angámi have tails of wood, decorated with goat's hair dyed red.[2] Angámi hair dressing varied for boys and men. Very young unmarried girls were distinguished from the married by shaven heads, in contrast to hair allowed to grow. I do not find it clearly stated whether the men show marriage by the hair dressing; in some villages such was the custom.

J. Johnstone, p. 29.

Woodthorpe, "Journ. Anthrop. Inst.," xi.

In the nape of the neck a large white conch shell shaped so as to lie flat was invariably worn.

Ibid. p. 60.

The (Manipuri) Angámi women when young wore coloured cloth, when old, white; before marriage the girls' heads were shaved, and a shell ear ornament was worn, after marriage the hair was allowed to grow and the ear was left bare of ornaments. The Manipuri Angámi are reported to have possessed no musical instruments of any kind, the accompaniment to song and dance being hand-clapping; the games for these young Angámi were Kang Sannaba and peg-top. It may be noted that according to Captain Butler the Angámi never indulged in either opium or tobacco.[3]

Brown, p. 34.

Brown, p. 36.

Butler, 1875, "Journ. As. Soc. Bengal," xliv, I, p. 319.

The Angámi would appear to be not quite without domestic amenities; "most of the Angámis eat their food," Colonel Woodthorpe writes, "with bamboo spoons out of wooden bowls furnished with four little feet, forming at once table and plate into which the good woman of the house poured each person's portion of the meal."

Two instances quoted by Colonel Woodthorpe, of symbolic messages throw interesting light on the methods of the senders. In one case a challenge or declaration of war was conveyed by means of a piece of charred wood, a bullet and a chilli; this was handed on from village to village till it reached the one for

Woodthorpe, "Journ. Anthrop. Inst," xi, p. 71.

birds called hornbills that inhabit the dense forest of the Burail Mountains." Woodthorpe, "Journ. Anthrop. Inst.," xi.

[1] Mills. p. cxlii. Captain Butler writes ("Journ. As. Soc., Bengal," xliv, I, p. 327) "the Angámi equivalent for a V.C., or 'reward of valour,' is a Toucan's tail feather and hair collar . . . "

[2] Sir J. Johnstone says that the cowrie ornaments on the kilt (a dress no man could wear till he had killed an enemy) were taken off when a man was mourning the death of a relation.

[3] Colonel Woodthorpe writing somewhat later notes this restriction for the Western Angámi. "Journ. Anthrop. Inst.," xi.

which it was intended "the piece of burnt wood signified the nature of the punishment threatened (*i.e.*, a village consigned to flames), the bullet descriptive of the kind of weapon with which the foe was coming armed, and the chilli the smarting, stinging, and general painful nature of the punishment."[1]

We may conclude these notes on the Angámi Nágá with the character accorded to them by Captain Butler: "The average Angámi is a fine, hardy, athletic fellow, brave and warlike, and, among themselves, as a rule, most truthful and honest. On the other hand, he is blood-thirsty, treacherous, and revengeful to an almost incredible degree." This however, Captain Butler adds can scarcely be wondered at when we recall that revenge is "considered a most holy act, which they have been taught from childhood ever to revere as one of their most sacred duties."

Butler, 1875, "Journ. As. Soc. Bengal," xliv, I, p. 320.

I am indebted to Colonel R. G. Woodthorpe, R.E., for permission to illustrate this paper from some of his sketches, made in the Nágá Hills; these sketches have furnished the material for all the plates in the present paper, with the exception of Plates IV and V. These are from photographs of Nágá objects collected by Mr. S. E. Peal, and now in the Museum at Oxford.



HEAD-DRESS NAMSANGIA NÁGÁ.

[1] In the same paper Col. Woodthorpe quotes the following symbolic act, I am not clear whether with reference to the Angami: "A ceremony of submission after defeat, and offer of peace, is to take a handful of earth and grass, and after placing it on the head to put it on the edge of a dáo, and chew it between the lips, 'one of the most literal and disagreeable renderings of the metaphorical term "eating dirt."'" *op. cit.*, p. 71.

The following references may prevent any obscurity from abbreviations in this, and the previous, paper:—

A Descriptive Account of Assam. *W. Robinson.* 1841.
Report on the Province of Assam. *A. J. M. Mills.* 1854.
Art. in "Journal of the Asiatic Society of Bengal," vol. xxiv. *Stewart.* 1855.
Selections from the Records of the Government of India. No. 27. *W. McCulloch.* 1859.
Ethnology of Bengal. *Dalton.*
"Statistical Account of the Native State of Manipur. . ." *R. Brown.* 1873.
Art. in Journal Asiatic Society, Bengal, vol. xliv. *J. Butler.* 1875.
Art. in Journal Royal Asiatic Society, vol. xii, n.s. *G. H. Damant.* 1880.
Articles in Journal Anthropological Institute, vol. xi. *R. G. Woodthorpe.* 1881-2.
North East Frontier of Bengal. *Sir A. Mackenzie.* 1884.
Report Assam Census. 1891 (quoted as A.C.R.)
My Experiences in Manipur. *Sir James Johnstone.* 1896.

Sir STUART COLVIN BAYLEY, K.C.S.I.: I can in no way pretend to be an authority on the subject of to-night's paper, as it is seventeen years since I visited the Nágá Hills, or was connected with their administration, but I know enough of the country and the people, and take sufficiently keen an interest in them to recognise the value and importance of the paper which has just been read, and to endorse the chairman's view of the gratitude which is due to the authoress for preparing it, and to Col. Woodthorpe for reading and illustrating it. I accept the chairman's view that while much has been done, especially by officials, to make known the habits and customs of this singularly interesting collection of tribes, yet very much remains to be done in elucidating their tribal history, their languages, and their ethnology. For we have here a very extraordinary mixture of barbarism and of civilisation. The Angámis who are the most powerful of the Nágá tribes are, from one point of view, in a state of savagery. They are (or I should say were, when I knew them) head-hunters, in that stage when a man's marriageable status was determined by his having taken a head, it might be of innocent women and children, when his highest crown of honour, the Victoria Cross, was a cowrie-covered decoration which signified the greatest number of heads taken, where the villages are built on the tops of the most inaccessible hills, and by artificial means made still more inaccessible than by nature, so that the people have frequently to go five miles down to their distant cultivation, and return after the day's toil, five miles up some of the stiffest hills I have ever negotiated, in order that they may sleep in safety, where the taboo and fetichism are in full swing, and a blood feud is carried on with scrupulous exact-

ness and a minute balancing of account from generation to generation, when the state of war has been so continuous that the dwellers in one valley are rarely able to understand the language of the dwellers in the next; yet these people, on the other hand, have a minute system of personal property in land, they have established an admirable system of cultivation by terracing the hill slopes to which they bring water for irrigation by channels five or ten miles off; though without tribal chiefs these democratic village communities manage this difficult water system with less quarrelling and rioting than prevails in India, and anyone who has had to deal with irrigation rights in the East knows what this means. The neighbouring tribes of North Cachar, the Kukis, the Lushais, and the Nágás of Manipur are still in the stage of migratory or *jhúm* cultivation, clearing a patch of jungle and cultivating it for three years or so, and then moving on to another patch, and moving their villages similarly from one site to another. The Angámis, who are the fiercest fighters, have alone risen to settled cultivation, and their villages are built with a solidity and stability which form a marked contrast to those of their more nomad neighbours.

I was struck with what was said of some of the tribal customs, such as that of the morung or bachelors' hall, and the closing on certain sacred days of the village to all ingress and egress. But these customs are not peculiar to the Nágas. They prevail among the Lushais or Kukis, to some extent among the tribes of the Chittagong Hills, the former custom among many of the Burmese wild tribes, and the latter, I think, was met with by Col. Woodthorpe among the Waos of the Shan States. I am not learned enough to venture an opinion on the question put by the chairman as to the connection by language or race of the Nágás with the peoples of the Malay Archipelago, but I would ask if any one can account for the singular ethnography of this particular range of hills which divides the valley of the Berhampootu from that of the Surma. At its western extremity it is peopled by the Garos, a tribe whose language, according to Bryan Hodgson, and caste connects them with the Kacharis and the many sub-Himalayan tribes of the north bank of the Berhampootu of whom the Koches were the most prominent. The next compartment is occupied by the Khasias and Jynteahs, a race whose language and whose customs, so far as is known, connect them with no other tribe on the frontier, and eastward again, passing over the scattered remains of the once powerful Kachari tribe, you come to another compartment inhabited by the Nágás. The name Nágá is an external name. They have no general distinctive name for themselves as a race, but only the separate tribal or clan names.

Is it certain that they are one race? They have many different languages, and in physical appearance they vary greatly. Their customs seem to connect them with the Kuki or Chin tribes, and probably with the Manipuris, but I expect the key to the problem will be found not so much in the language test, as in a continuation of the work so well begun by Mr. Risley, a comparison of the measurements of the facial angle and other physical characteristics of these or the neighbouring tribes on our eastern frontier.

Mr. Bouverie-Pusey asked whether the Nágás believed that the spirits or gods would punish the breach of their social taboos? also how the clan councils dovetailed with the village councils.

Dr. Leitner stated that in the admirable paper which they had heard there was no explanation as to the meaning of the term "Nágá," which was the same as our word "snake," and which was a well-known dynasty in Indian history. Did these "Nágás" worship, or kill, snakes? Vague analogies were as frequent among savage or semi-civilised tribes, separated by great distances, as they were deceptive, but still there might be something in the Chairman's suggestion that connections with the Nágás might be found in Northern as well as Southern India. For instance, the one-eyed god, the cap or helmet adorned with half-moon horns, the public dances as described, the "Udai" (or rather Haggai) for priests, the effigies erected over the corpse exposed on a platform or the top of a house, the pantomimic fights and reconciliations, the defiance of the gods, the houses for the retreats of men or women, some of the weapons exhibited, etc., offered similarities with one or the other tribes in Dardistan and Káfiristán that had been brought by him to the notice of the Association since 1869. Miss Godden and Colonel Woodthorpe had, in any case, rendered a great service to anthropology by their suggestive communication and exhibits this evening.

Mr. Crooke: It is not necessary to go as far as Káfiristán for analogies to Nágá customs. Many of them can be compared with customs of the Gonds, Bhíls and other Dravidian races. The local differences of language are found among all primitive people. Even in the North-Western Provinces there is considerable local variation of dialects. Herodotus notes that caravans in the valley of the Volga needed seven interpreters. The Lhupa rule of inheritance is perhaps analogous to the custom of deposing an aged king, as in the case of Laertes. The rule of the blood feud probably only imposed the penalty

of death if both slain and slayer were tribesmen. The meetings followed by a general *melé* are probably, as are other Indian examples, based on the principle that mock fights are an agency for propitiating the deity of vegetation. Marriage is evidently in a transitional stage, both bride purchase and the Beena form prevailing. The field offering at marriage is probably, as among the Kols, a propitiation of Dharti Mâta, the Earth goddess. The augury from the fowl is probably not taken from inspection of the entrails, as in the case of the Roman Haruspex, but from its acceptance or refusal of grain placed before it, as among the Kols. It is useless to speak of monogamy or polygamy as prevailing. These people, like all tribes of the same grade in India, marry as many wives as they can buy and support. The institution of the maidens' sleeping hall prevails among the Oraons and other Dravidians. Probably too much has been made of the custom in relation to sexual intercourse.

Their religion is obviously of the familiar animistic type. They have probably no idea of a single Creator, and they have not, as far as we know, a creation myth like that of the Kols and Santâls. They are now in or have only lately emerged from the totemistic stage, as is shown by assignment of various ('sacred') animals as sacrifice to different gods: the communion meal; the sacredness of the dog; tree burial; animal dances and personal decoration, as helmets, etc., in animal form. They have a Cyclops god, apparently not Indian. The blind god Kanquiba may be compared with the Greek Ephialtes and the Hindu Dirghatamas, and Andhaka whom the comparative mythologists consider a myth of dawn and darkness. As is shown by the special taboo, their real gods are those of tree, mountain, and forest, and the piling up of the cairn indicates their desire for communion with the jungle deity. The sacrifice to disease spirits is not, I believe, chthonic. The Indian disease gods are not, as a rule, fixed in the underworld. The custom of abandoning clothing is based on the principle that clothes are part of the individual. The right of cremation is perhaps not distinctively Hindu. The earliest cairns show either partial cremation or simple burial.

The remarkable point about them is that they combine several savage practices, *e.g.*, head-hunting with a high level of culture as shown by rights of property in land, fixed rules of inheritance, separation of adult sons, share assigned to daughters, definition of property of married women, and chiefly by their artistic powers as shown in their weaving or metallurgy. It is not quite certain how much of this art is indigenous, being much above the level attained by the Dra-

vidians. They inhabit a watershed between two civilisations, the Hindu and Burman, and it would be worth considering how far their art has been affected by intercourse with one of or both these races.

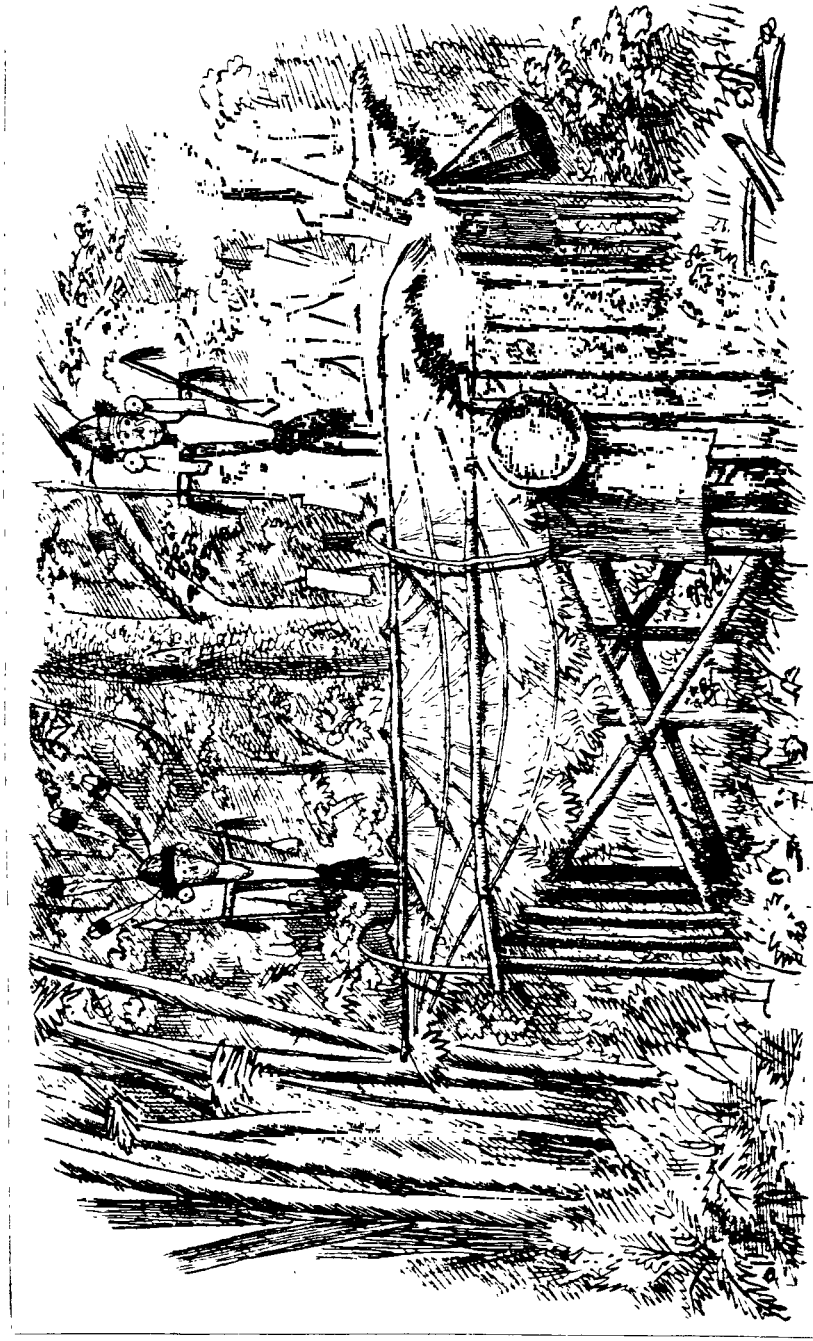
Mr. GOMME said he was sorry to appear as a somewhat adverse critic. In the presence of so many distinguished Indian officials his only right to intervene was that, like the author of the paper, he was a stay-at-home student of these races. Miss Godden had used terms of great importance in the history of institutions—tribe, clan and village, but she had not only not stated the relationship of these terms to each other but had used them in a certain sense as synonymous. We heard, too, of democratic community, of the village council, and of the clan council, of the blood feud, of individual rights to property. But he questioned whether any of these terms were justifiable, for they were the terms of advanced legal conceptions or of advanced communities, and were not applicable to the condition of these tribes. What was wanted on the other hand was to know what relationship the things implied by these terms had to the corresponding things among the village communities of India. It was impossible to study these tribes unless we began by most careful terminology in matters of such importance as institutions, and when he reminded the meeting that Professor Tylor's paper, read before the Society some years ago, gave the outline of what was required, he was sure that Miss Godden would not mind her attention being drawn to this important defect in her paper.

Miss GODDEN: After this long discussion I must only refer very briefly to one or two of the points that have been raised.

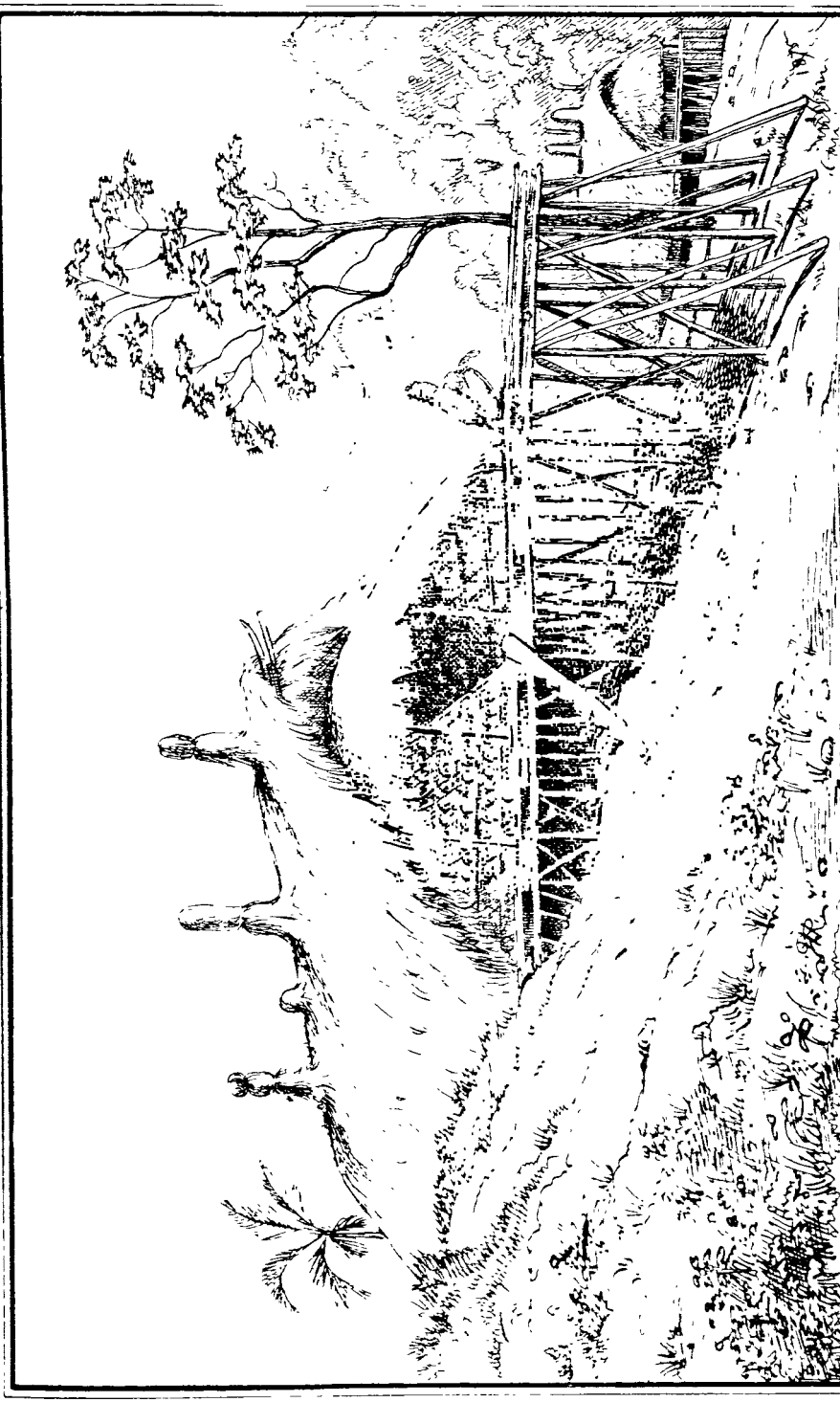
In reply to Mr. Gomme I would note the unsatisfactory nature of old Government Reports, as regards evidence of clan, tribal, and village institutions: and that in the latest blue-book with which I am acquainted the information is far from adequate.

As regards the name *Nágá* it is said not to be a name used among the tribes themselves; it has been explained as an Assamese word, and any connection with certain snake worshippers, of like name, in India has been emphatically denied.

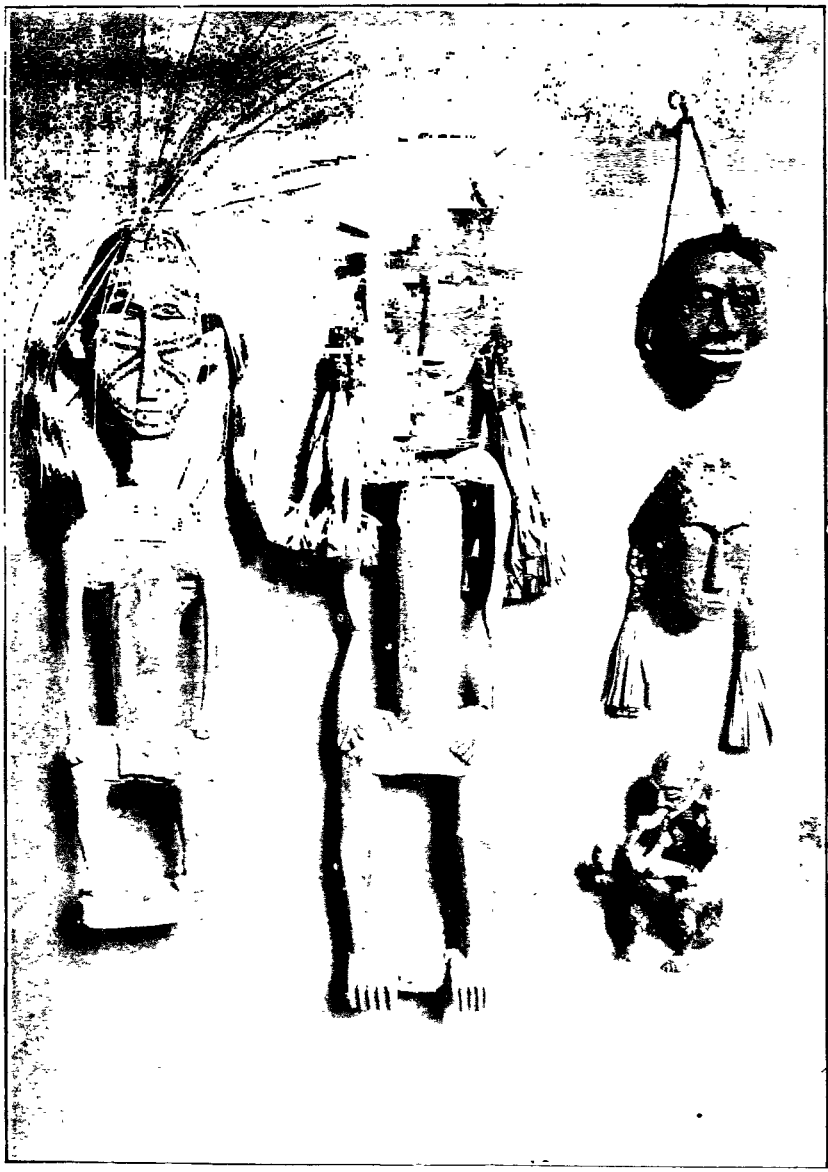
A phrase has been used by Dr. Leitner regarding the Nágá funeral challenge which I think needs revision, the term, "defiance of the gods." As far as I am aware there is no sufficient evidence for giving the name of *deity* to the spirit to



TOMB—NAGA VILLAGE IN JAIPUR DISTRICT.



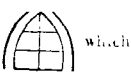
MORANG—NAGA VILLAGE, JAIPUR DISTRICT.



NÁGÁ OBJECTS IN THE UNIVERSITY MUSEUM, OXFORD.
Photographed by kind permission of H. Balfour, Esq.

1 & 2.—Two rather common effigies from a Rakuma or burial platform. Arms both ways Jonah-like.
3 & 4.—Two small carved-wood heads, probably from "Morungs" or carrying baskets. The heads have tattooing represented.
5.—Carved-wood boy, mother and child given to S. T. Peal by Tapping father of present Banpara Raja (Parbang).



6 & 7.—Tupis or head covers. 7 shows pattern in yellow cane  which is persistent and must not vary, as it has some old time religious or historic mean...

8.—Chief's [illegible] a woollen coil bound with cane and tassel of hair and fibre at bottom, worn by chiefs at dances, hung from back of head.

9.—"Kyapi" or hide cutlass. Shoulder-pieces gone, now very rare.

10.—Bamboo [illegible] with handles

which the challenge is addressed. I would suggest that in this funeral war-challenge the Nágá is carrying the blood feud beyond visible enemies: that he is challenging the unseen hostile spirit by whom the dead man has been slain. We may remember that, to the primitive mind, spirits are very tangible things.

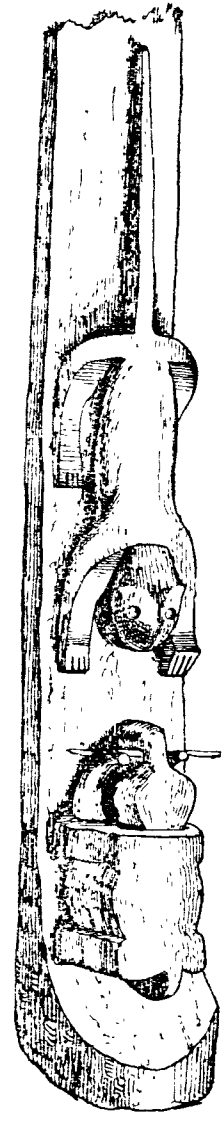
In regard to the argument derived from the lack of any creation myth among the Nágás I think our information as to these tribes is as yet too incomplete to allow us to argue safely from the *absence* of any fact. Such apparent absence may be due merely to our imperfect knowledge.

Description of Plates.

Plate I.—"Puntun Rankamtingsa." From a watercolour sketch by Col. R. G. Woodthorpe, C.B., made in camp on the Towkok river, April 7th, 1876.
„ II.—Tomb—Nágá village in Jaipur district.
„ III.—Morang—Nágá village, Jaipur district.
Page 6.—A Nágá headman.
„ 17.—Eastern Angámi (previously published in the "Journal of the Asiatic Society of Bengal," vol. xliv, 1).
„ 21.—Eastern Angámi (ditto ditto)
„ 45.—Head-dress. Namsangia Nágá.
„ 51.—Principal upright in Morang. Hatgoia Nágá village, Sibsagar district.

Nágá objects in the University Museum, Oxford, photographed by kind permission of H. Balfour, Esq.

Plate IV.—1 & 2.—Two rather common effigies from a "Ruktua" or burial platform. 2 faces both ways, Janus-like.
3 & 4.—Two small carved-wood heads, probably from "dangsas" (or carrying baskets). The heads have tattooing represented.
5.—Carved-wood toy. Mother and child, given to Mr. S. E. Peal, by Tingpong, father of present Banpara Raja (Panbang).
„ V.—6 & 7.—Topis or head-covers; 7 shows pattern in yellow cane  which is persistent and must not vary, as it has some old time tribal or historic meaning.
8.—Chief's queue, wooden coil bound with cane, and tassel of hair and fibre at bottom, worn by chiefs at dances, hung from back of head.
9.—"Kyep" or hide cuirass—shoulder-pieces gone, now very rare.
10.—Bamboo grog mug with handles.



DEKHA HAIMUNG.
Principal upright in Morang, Hatgoia, Naga village, Sibsagar district.

Bullroarers *used by the* Australian Aborigines. By R. H. Mathews, L.S., Corresponding Member Anthrop. Inst. of Great Britain.

[WITH PLATE VI.]

The bullroarer has played a prominent part in the ceremonies of various peoples, among whom may be mentioned the ancient Greeks, the North American Indians, some of the native tribes of Africa, and the Maoris of New Zealand. Its history in other countries will not, however, be discussed in this paper, the purport of which is simply to place before the reader a short description of the various forms of Australian bullroarers, accompanied by illustrative drawings. No comprehensive article of this character has hitherto appeared on the subject, so far as the writer is aware: and it is remarkable that even in our Australian Museums, all the different forms of bullroarers are not represented. In a number of papers on the initiation ceremonies[1] of various tribes, I have fully detailed the manner in which these instruments are employed on such occasions, which need not be again repeated in this memoir.

The bullroarers in use among the aborigines of Australia are generally made of a thin piece of wood, but occasionally of bark, and are of different sizes, varying in width from less than an inch to as much as 4 or 5 inches, and differing in length from about 4 inches to 2 feet, or even longer. They are made tapering at each end, and are somewhat thinner at the edges which are blunt, than in the middle. Some have serrated edges, like Fig. 5, while others are quite plain. Both sides of the instrument are generally convex, as in Figs. 6 and 10, but in some instances one side only is made convex, and the other either flat or slightly concave, as in Figs. 3, 4 and 15. In some cases a nick is made in the distal end of the bullroarer, resembling the letter V, as in Fig. 11. Others are ornamented on one or both sides by having devices carved upon them, similar to those seen on boomerangs, throwing sticks, and other native weapons (Figs. 1 and 2). Many of them are painted over with red ochre.

[1] "The Bora, or Initiation Ceremonies of the Kamilaroi Tribes," "Journ. Anthrop. Inst.," xxiv, 411-427; *Ibid*., xxv, 318-339. "The Bŭrbŭng of the Wiradthuri Tribes," "Journ. Anthrop. Inst.," xxv, 295-318; *Ibid*., xxvi, 266-279. "The Keeparra Ceremony of Initiation," "Journ. Anthrop. Inst.," xxvi, 320-340.

They generally have a small hole at one end, through which is fastened a string, made either of the bark of certain trees, native flax, the fur of animals, or of human hair; and the string is sometimes as much as a dozen feet in length. In some tribes, instead of fastening the string through a hole, it is tied to the end of the bullroarer in much the same way that a whip is tied to a handle. When this form of fastening is used, one end of the bullroarer is made tapering to a long narrow point, on which a small knob is left, to which the long string is bound by means of a fine cord. (Figs. 7 and 8.) In other districts there is a nick in the small end of the bullroarer, in line with the hole and close to it, as in Figs. 12 and 13, for the purpose of facilitating the attachment of the string.

Bullroarers are usually made of a piece of straight wood, but specimens are not infrequently met with which have a slight spiral twist, due in most cases, no doubt, to the warping of the wood after it is made: but in some instances which have come under my notice, it was evident that the wood had always had a natural twist in it, which the native had either been unable to remove, or did not attempt it.

Before proceeding to describe the bullroarers observed by myself, it may be interesting to make a few selections from other works, for the purpose of giving my readers the descriptions recorded by various authors as the results of their own observations, some of them dating back about fifty years. These selections, it is hoped, will not be considered unnecessary, because some of the books from which they are taken are now out of print, and others are not accessible except in a few libraries. It is thought, moreover, that collating the information under one head, in the same book, will be found an advantage to the student. It should be stated, however, that the accounts of the bullroarers given in the works referred to, are of the most fragmentary and unsatisfactory character, being in some cases so indefinite as to throw uncertainty over the intended meaning. In making these quotations, I shall take some relating to each of the Australian colonies, and from localities widely separated, for the purpose of showing the universality of the use of the bullroarer at the initiation ceremonies of the aborigines throughout the continent.

Mr. C. Hodgkinson, in speaking of the initiatory rites among the blacks of the Macleay and Nambucca rivers, New South Wales, says: "Each man was provided with a singular instrument, formed of a piece of hollowed[1] wood fastened to a long

[1] The word "hollowed" is evidently intended to mean the following out of one side of the instrument, like Fig. 15.

piece of flax string."—"Australia from Port Macquarie to Moreton Bay" (1845), p. 232.

Mr. Isaac Nathan says that at the ceremony of the Kibbarah [Keeparra] in the district of Port Macquarie, New South Wales, a bullroarer was used. It was "a flat piece of wood about a foot long, notched all over,[1] with a hole in one end, through which passed a string of Kurrajong bark as a laniard."—"Southern Euphrosyne" (1848), p. 100.

Mr. Charles Wilhelmi states that in the Port Lincoln district, County of Flinders, South Australia, this instrument was called *wituna*. It was made of a piece of wood 18 inches in length, 4 inches in breadth, and a quarter of an inch in thickness. It was tied to a long string, and the native swung it about his head, in such a manner as to produce a low rumbling sound at intervals, ceasing and returning at each effort of the performer."—"Trans. Roy. Soc. Victoria" (1860), vol. v, p. 172.

In describing the customs of the Mycoolon tribe, Flinders River, Queensland, Mr. E. Palmer says: "The humming stick, called *mokaloh*, used at Bora times only, is a flat piece of wood, 9 inches long, 2 inches broad, and thin, tied to another stick, to warn the gins not to approach. No woman is ever to see it, or any uninitiated youth."—"Journ. Anthrop. Inst.," xiii, p. 295.

Mr. A. L. P. Cameron in alluding to the Burbung ceremonies, among the Wiradjuri tribes on the Lachlan and Lower Murrumbidgee Rivers, New South Wales, describes the bullroarer as "a flat piece of wood, with serrated edges, and having a hole at one end to which a string was attached."—"Journ. Anthrop. Inst.," xiv, pp. 357 and 359.

Mr. A. W. Howitt says that among the Dieri tribes about Lake Eyre, South Australia, this instrument is called *yuntha*, and is from 4 to 6 inches long, a sixteenth of an inch thick, and from 2 to 2½ inches wide. It has notches at each side, and a small hole at one end, to which is attached a string about 10 or 12 feet long, made either of native flax or human hair.—"Journ. Anthrop. Inst.," xx, p. 83.

In the Kimberley district of Western Australia, according to Mr. W. W. Froggatt, the bullroarer is used at the ceremony of circumcision. "The men are stationed round, whirling flat oval sticks, on which are carved curious symbols."—"Proc. Linn. Soc. N.S. Wales," iii, 2nd Series, p. 652.

At the Jeraeil or initiation ceremonies of the Kumai tribe, Victoria, Mr. A. W. Howitt says that the bullroarer was used,

[1] This "notching" probably refers to the nicks in the edges only; if not, the instrument must have had marks cut upon its flat surface like those seen on message sticks.

and was there called *tăndūn.*—"Journ. Anthrop. Inst.," xiv. pp. 301 and 313.

Mr. Wyndham states that, among the aborigines of the western parts of New England, New South Wales, "the principal man who presided over the Bora made a most terrific noise with a piece of bark, having a string through it, cut something like a boomerang."—"Journ. Roy. Soc. N.S. Wales," xxiii, p. 38.

The Rev. W. Ridley in "Kamilaroi and Other Australian Languages," pp. 140–141, states:—"This old man (Billy, a very old black fellow of Burburgate[1]) told me as a great favour that other blacks had withheld as a mystery too sacred to be disclosed to a white man, that *Dhurumbulum*, a stick or wand, is exhibited at the Bora, and that the sight of it inspires the initiated with manhood. This wand was the gift of Baiamai." At p. 156 he also says:—"A sacred wand, Dhurumbulum, given them by Baiamai, is exhibited; and the sight of this wand as waved by the old men in the sight of the candidates, inspires manly qualities."

Mr. R. B. Smyth, in his "Aborigines of Victoria" (1878), vol. ii, p. 285, says on the authority of Mr. Ridley:—"Among the ceremonies of the Bora is the exhibition of a sacred wand, which they say was given to them by Baiamai, the sight of which is essential to impart manhood."

In the "Journal of the Royal Society of New South Wales" (1882), vol. xvi, p. 207, Dr. J. Fraser, in referring to the Bora says: "At some part of the ceremony, he [the novice] is shown a sacred wand." At p. 216, he speaks of "the magic wand that Ridley mentions." Again at p. 217 he says: "The next step in the process of initiation is interesting: the *buma'at* [novice] is shown a sacred wand." The same author, in "Aborigines of New South Wales" (1892), pp. 13 and 19, refers in somewhat similar terms to the "sacred wand."

There is no doubt in my mind that the "sacred wand" referred to by Mr. Ridley, and the other authors who have copied from him, is identical with the bullroarer. The great secrecy under which the information was imparted to Mr Ridley agrees exactly with the mystery surrounding the use of that instrument: the uninitiated or the women are not permitted to see it, or to use it under pain of death. Although Mr. Ridley had given much attention to the languages and legends of the blacks he does not seem to have been acquainted with the sacredness of the bullroarer, for we find that he makes no reference to any other sacred instrument except the "stick

[1] Burburgate is on the Namoi river about ten miles below Gunnedah, N.S.W., and is in the Kamilaroi country.

or wand." In narrating the information obtained from Mr. Hornery, he states that "Each youth took up a piece of string with a bit of wood at the end, which he whirled round, with a whizzing sound, three times." *Loc. cit.*, p. 154. I am inclined to think that if Mr. Ridley had known the important part assigned to the bullroarer in the ceremony, he would have recognised its identity with this "bit of wood at the end of a string," and would not have passed it over with this scanty allusion to it.

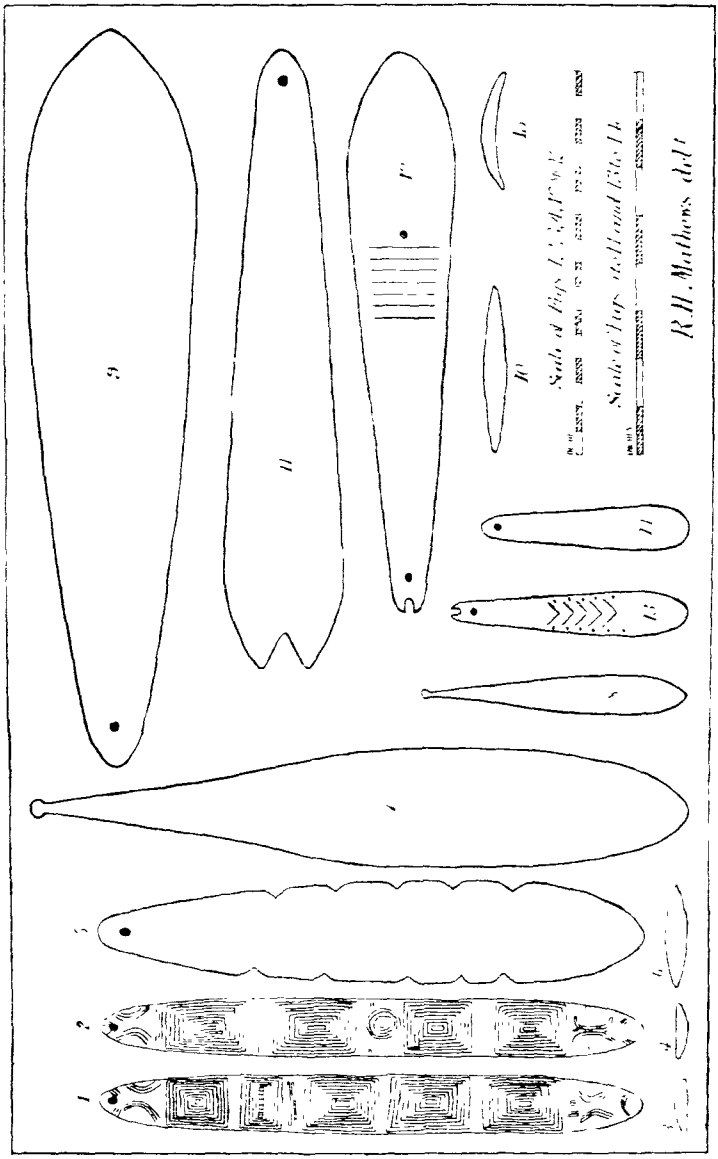
The "stick or wand" was "waved by the old men," which corresponds exactly with the way in which the bullroarer is used. It was "at the Bora" that it was "exhibited:" and it was "the gift of Baiamai," which further confirms its identity with the bullroarer. It is also stated that this "stick or wand" was called Dhurramoolan [Dhurramoolin] and that the blacks of Twofold Bay used this word for the name of their god (pp. 115 and 156). Among the Kamilaroi tribes who attended the Bora described by me in the "Journal of the Anthropological Institute of Great Britain," xxiv, p. 419, the bullroarer was called *murramurra*, and the alternative name Dhurramoolan; at the Bunbung of the Wiradthuri tribes on the Macquarie and other rivers it is called *murrumbul* as well as Dhurramoolan[1]; and among the Gourengaal blacks of the Paterson river it is known by the names of *murrumbul* and Dhurramoolan.

Among the three last mentioned tribes, Dhurramoolan is a dreaded evil being who is supposed to attend at the initiation ceremonies, and the sound of the bullroarer represents his voice which is said to have resembled the rumbling of distant thunder, or the weird roar of the wind during a storm. Among the natives of the Macquarie and Bogan rivers, and other Wiradthuri tribes, a small bullroarer, called *murrumbul*[2] is used in addition to the larger one. It has a short string, which is fastened to the thin end of a pliable stick resembling the handle of a whip. It has a shrill sound which is easily distinguishable from the loud humming of the larger instrument. The noise made by the *murrumbul* is said to represent the voice of Dhurramoolan's wife.

To use the bullroarer, a beginner should attach to it a cord or string about 3 feet long, which he should catch in one hand, and swing the instrument with tolerable velocity round and round his head. The air will soon cause it to revolve rapidly on its own axis, in addition to the swinging motion, when it will begin to make a weird humming or roaring sound.

[1] "Journ. Anthrop. Inst.," xxv, p. 298, Plate XXVI, Fig. 38.

[2] See my paper on "The Bunbung of the Wiradthuri Tribes," "Journ. Anthrop. Inst.," xxv, p. 298, Plate XXVI, Fig. 39.



BULLROARERS USED BY THE AUSTRALIAN ABORIGINES.

The spinning of the instrument on its axis in one direction will obviously twist the string, which after a time recoils, and causes the spinning to take place in the contrary direction, thus unwinding the former twisting, and continuing till it is twisted the other way as far as it will go, when it again commences to unwind, and once more changes the direction of the revolution of the instrument on its axis. This is repeated continually during the performance. At each of these turning points, between the twisting and untwisting of the string, the sound momentarily ceases which causes the intermittent humming noise familiar to those who have heard the instrument in use. Variation in the intensity of the sound can also be made by swinging the instrument more rapidly at one point of its circuit than at others. The learner can keep on increasing the length of the string until he can use the bull-roarer with 8 or 10 feet of cord attached to it. If the instrument does not commence to revolve on its axis after having been swung round the head a few times, allowing it to lightly strike the ground will have this effect, and the humming sound will at once begin.

In using the *mogwar* it is only necessary to take hold of the handle, with the instrument hanging freely on the end of its string, and whirl it round as if it were a whip. As soon as the instrument begins to revolve on its axis, it will give out a shrill, whizzing sound, which can be heard for a considerable distance at night when everything is still.

Explanation of Plate VI.

The Australian bullroarers illustrated in this Plate are from the most representative collection with which I am acquainted. The figures are drawn simply as diagrams, showing the shape and outline of the several instruments, without any shading to produce perspective. It is thought that accurate drawings of the various instruments will enable the student to more thoroughly understand the copious written details of description. Those who wish to become more fully acquainted with all the uses to which the bullroarer is applied by the Australian tribes can obtain all the necessary information by a perusal of the several papers on Initiation Ceremonies referred to in the opening paragraph of this article, and elsewhere throughout the paper.

Figs. 1, 2, 3, and 4. These drawings show the two sides and cross-sections of a bullroarer used by the aborigines of the Oscar Ranges, Kimberley district of West Australia, courteously lent to me by Mr. W. W. Froggatt in order that I might make a copy. The length of the instrument is 22½ inches; its breadth at the widest place 2½ inches and its thickness ⅛ of an inch. There is a hole in one end for the string used in swinging it. One side is convex and the other flat,[1] a peculiarity

[1] Several bullroarers which I have seen from the Kimberley district were flat on one side, which was more or less elaborately carved into rectangles, ovals, and various patterns by means of straight or zigzag lines, both with the grain of the wood and across it, the other side was slightly rounded, and had no carvings upon it.

I have before observed in bullroarers from West Australia. Fig. 1 represents the drawings on the convex face; Fig. 2, those on the flat face; Figs. 3 and 4 being cross sections at the widest part. I was unable to ascertain the name of the wood out of which it is made.

Figs. 5 and 6. The bullroarer here shown was given to me by a Kamilaroi tribe on the Weir river, Queensland, and was used in mustering the tribes to attend a Bora at Tullwood, at which I was present.[1] It is nearly 11½ inches long, 2½ inches wide, and $\frac{6}{16}$ of an inch thick. It is made of *mulga* wood, and has six notches on each edge, not quite opposite each other, with a hole in one end for the insertion of the string. The instruments used at the Bora ring in the principal parts of the ceremonies were much larger than this one, being about 18 or 20 inches long, and made of *belar* wood.[2]

Fig. 7. This drawing represents the bullroarers used by the Wiradthuri tribes on the Macquarie, Bogan, and other rivers. It was given to me by the headman of a tribe on the former river, and was used in the Burbung ceremonies of his tribe.[3] It is made of *brigalow* wood, and is nearly 13½ inches long, 2½ inches wide, and $\frac{7}{16}$ of an inch thick. A cross section through the widest part would be similar to Fig. 6, but correspondingly larger. A string is fastened over the small knob at the tapering end, in the same way that a whip is fastened to its handle.

Fig. 8 is the small bullroarer or *moonibear* used by the same tribes as Fig. 7. It is made of sandal-wood, its length being 5½ inches; its breadth ¾ of an inch; and its greatest thickness $\frac{3}{16}$ of an inch. The string and handle attached thereto, when given to me by the natives, were of the following measurements: The handle, made of *murgal* wood, 2 feet 7 inches long, and the string attached to it 2 feet 8 inches in length. The *moonibear* is sounded at the Burbung ground during the continuance of the ceremonies of initiation.

The form of the bullroarer shown in Figs. 7 and 8, representing the large and small kind, with the manner in which the string is attached to them, are in use over a large area, extending from the Macquarie to the Culgoa rivers, and probably farther north. Among the tribes on the Culgoa, the larger instrument is called *wuddoolnurran*, and the smaller, *ghuldookumbal*, and both are used in exactly the same way as the *mudthega* and *moonibear* herein described.

Fig. 9. This drawing represents the *goonandhukeen* of the tribes scattered over the country between the Hunter and Macleay rivers in New South Wales. It is used at the Keeparra and Dhalgai ceremonies in the manner described in my paper on the "Keeparra Ceremony of Initiation."[4] The instrument illustrated is made of iron bark, and is 15½ inches in length, and 3 $\frac{7}{16}$ inches broad. It is $\frac{7}{16}$ of an inch through the thickest part, a cross section of which is given in Fig. 10. There is a hole at the narrow end of the instrument for the insertion of the string.

Fig. 11 shows the *moorooga* of the tribes occupying the Shoalhaven river and south-east coast of New South Wales, and is used at their initiation ceremonies in the way described in my paper on the Bunan.[5] The drawing shows a *moorooga* made of stringy bark wood, 13 inches long, 2 $\frac{7}{16}$ inches wide, and $\frac{7}{16}$ or an inch thick. In the smaller end is

[1] "The Bora of the Kamilaroi Tribes," "Proc. Roy. Soc., Victoria," ix (N.S.), 137–173.

[2] A small bullroarer, called *moonibureebean*, similar in shape to Fig. 5, but plain at the edges, is also used at the Bora ceremonies.

[3] "Journ. Anthrop. Inst.," xxv, 315. *Loc. cit.*, 319.

[4] "Journ. Anthrop. Inst.," xxvi, 320, 338.

[5] "American Anthropologist," Wash., x.

a hole for the string, and at the wide end there is a large triangular-shaped notch cut out of the wood, a peculiarity I have also observed in the bullroarers (*mudjeegang*), used by the Wiradthuri tribes located on the upper Murrumbidgee river.

Fig. 12 represents the *dhoonbooka* or *yooluadra*, the bull-roarer in use among the Clarence and Richmond river tribes, and adjacent districts. Its length is 1 foot 11½ inches, the breadth slightly over 4½ inches, and its greatest thickness about ¾ of an inch. Its form differs from any of the others shown on the plate, by having a nick cut in the small end for the purpose of facilitating the attachment of the string. One side of the instrument is of the usual convex form, whilst the opposite side is slightly hollowed or concave, as illustrated by a cross-section through the widest part of the instrument (Fig. 15). On the concave side is a shallow hole or pit about ½ of an inch deep, above which are several transverse lines, extending almost the width of the instrument. Along the medium axis of the convex face of the bullroarer are about half-a-dozen V-shaped devices, with the apices pointing towards the larger end, and on each side of these marks are one or more rows of dots. As the large and small bullroarers used by the tribes mentioned are both marked in a similar manner, the carving on the convex side of the *dhalguāgun* is shown in Fig. 13, in order to save giving duplicate drawings of each instrument.

Fig. 13 is a drawing of the *dhalguāgun*, or small bullroarer, equivalent to the *moombear* (Fig. 8), and is used by the same tribes as Fig. 12. The instrument illustrated is 5 inches in length, nearly an inch in breadth, and $\frac{1}{15}$ of an inch in thickness, and is made of myrtle wood. The handle and string attached to it when in use are somewhat shorter than those attached to Fig. 8. It is likewise rounded on one side, and slightly hollowed on the other as in Fig. 15, and has the same characters carved upon it as the larger instrument.

In some of the bullroarers which have a nick or notch in the end to which the string is attached (as in Figs. 12, 13), there are also a few small projections, somewhat resembling the teeth of a saw, on both edges of the instrument, about on a level with the hole, or slightly in advance of it. When the string or sinew is passed through the hole, it is also twisted round the bullroarer, and the raised teeth referred to prevent its slipping, and make the fastening more secure.

Fig. 14. This drawing shows the *gheewarra* or *ngurangu*, the small bullroarer used at the initiation ceremonies of the tribes occupying the Macleay and Bellinger rivers, on the north-east coast of New South Wales. The length is 4½ inches, the breadth $\frac{13}{16}$ of an inch, and its thickness ⅛ of an inch. It is attached to a handle and has a short string, and is used in precisely the same manner as the *moombeer*.[1] These tribes also use a larger instrument called *gi'mbooma*, which is similar in all respects to Fig. 9 already described, and therefore a separate illustration of it is not necessary.

It is unnecessary to add that there is no fixed size for either the large or small kinds of bullroarers among any of the tribes. The larger the instrument the louder the sound, provided it be properly made, but at the same time it is harder to swing it,

[1] "Journ. Anthrop. Inst.," xxv, 298, Plate XXVI, Fig. 33.

and the wear upon the string is increased by the greater weight. Generally speaking, a bullroarer from 1 foot to 18 inches in length is found sufficiently large for all purposes. Bullroarers of the *mogohar* type are made just heavy enough to give them the necessary impetus through the air.

Among the native tribes near Townsville, and other parts of the eastern coast of Queensland, I have seen bullroarers made of a thin flat piece of wood resembling a parallelogram in shape, with the corners slightly rounded off. Another peculiarity of these instruments was that the end containing the hole through which the string was inserted was slightly wider and heavier than the other end. They were about 1 foot long and 2 inches wide, of the usual thickness, and were bevelled off towards the edges, which were blunt like those illustrated in this paper. The strings were generally made of human hair.

MARCH 9TH, 1897.

E. W. BRABROOK, Esq., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The following communication was read by the Author:—

"The Mythology of Wise Birds," by Dr. COLLEY MARCH.

The PRESIDENT, Sir H. LOW, Dr. GARSON, Mr. LEWIS, Mr. ATKINSON, Rev. Mr. HUTCHINSON, and Mr. B. PUSEY discussed the paper, and a vote of thanks was unanimously passed.

The BERBERS *of* MOROCCO. By W. B. HARRIS.

THE term Moors is so generally applied to the inhabitants of Morocco, that there are many who are unaware to-day that the population of that benighted empire consists of two distinct races, so distinct indeed that they boast of origins entirely separate and apart. While the Arab, or Semitic, invasion of Morocco did not occur until many centuries after the Christian era, the Berbers, a distinctly Hamitic race, had been inhabiting North Africa from time immemorial, even if it was not the cradle of their race. Of these Berbers but little is known. True it is that Algeria and Tunis have been opened up to European ideas and influences, but in spite of this the retiring character of the Berbers has tended not a little to keep their race in the background, though the French, often enough, have found it no easy task to subdue and pacify these turbulent people. But even before the conquest by France of Algeria, the Berber people of that country had amalgamated far more largely with the Arabs than has even been the case in Morocco. The explanation of this is easy to find, for in Algeria while both races were governed for long periods by an extraneous power —Turkey and Turkish Beys—it was only natural that the tribes of the two races in question, who shared between them the proprietorship of the soil, should find a common cause. Nor did the invasion of the country by French troops tend to widen any breach that might exist between the two races, for here again it was a mutual defence of the country and the religion they both shared against a foreign and, to them, infidel power.

But in Morocco there has been no common cause to unite the Berbers and Arabs, for since the first conquest of the country by the invading Semites, a deadly hatred has existed, which burns to-day as fiercely as ever, fanned into rebellion and warfare whenever the dominating Arab power attempts to enforce tribute, or practises some nefarious act of treachery, in which act the Moorish Government is unequalled, upon the more confiding and more manly Berbers. Everything in fact has tended through all these centuries to widen the breach between them, until to-day, even when inhabiting common soil in the cities, the two races remain entirely separate. So far do they hold aloof one from another that it is almost always a rule to find the members of each people favouring certain parts of the towns, and congregated together in quarters of their own. Thus it is that at Tangier, where the representatives of the Berber race are almost entirely Riffis of the Mediterranean coast, of whom more anon, while the town is given over to the Arab or Moorish population, the descendants of the Hamitic stock have built themselves an extensive village of thatch huts on the summit of a near hill, where they reside and own an allegiance little more than nominal to the Basha, or Governor of Tangier, whose residence stares them in the face. And so throughout all Morocco, with the exception of the southern capital, Marakesh, where the Berber population is much larger, and where they seem to have so far amalgamated as to share the same quarters of the city. But it is not with the Berbers who have left their wild mountains to congregate in the proximity of the towns that we have to do here, for, although even in this case the type and language have remained unchanged, they have to some extent adopted the customs and the habits of the Moors, and accordingly some of the typical race character which is only to be found to-day in the remoter portions of the country, where the officials and rapacity of the Moorish Government have not reached them, and the immorality and depravity of the Arab are as yet unknown.

The Berber population of Morocco may be divided into four distinct classes, three of which alone can lay claim to possessing the pure blood of their original ancestors. Although these four divisions possess much in common there are yet great differences to be distinguished by the observer. That they own a common origin none can doubt, and to this too tradition clearly points. There is a tale well known amongst the Berbers of Morocco of which the true and hidden meaning is yet to be evolved.

Once, so the story runs, their common ancestor lived in a far away land where storms of wind were of constant occurrence.

Upon a certain day a young girl of the people was passing by the road-side when a king rode past. A gust of the wind raising her garments, more of her body than was decent was exposed to view. The king laughed, and for very shame the girl and her tribe migrated and came into what is now Morocco. This tale, told to the writer by representatives of the various sections of the Berber race, differs little if anything in detail in the mouths of any, and seems as well known in the Riff, to the extreme north of Morocco, as it is on the southern side of the Atlas Mountains. Yet in spite of the fact that it is quoted by Riffi and Susi alike, these divisions of the race, together with the Berbers of the Central Atlas range, speak languages which, though undoubtedly related, are, except for individual words, unintelligible one to another, while in outward appearance the type is very different.

Mention of the four divisions of the Berbers by name, and their geographical distribution, is necessary before any details as to their manners and customs and modes of life can be entered upon. Commencing from the north of the country we find the long strip of Mediterranean coast between the French frontier of Algeria and the mountains to the south of Tetuan inhabited by the Riffis, perhaps the wildest and most turbulent of all. Cut off from these to the south by Arab tribes, and inhabiting the northern and central slopes of the Atlas range, from Fez on the north to Marakesh in the south, are the purest Berbers of Morocco, the unexplored and little known tribes of Beni Mgild, Ait Yussi, Ghiata Beni Mtir and others. South of the western slopes of the Atlas, that is to say, south and west of Marakesh, along the slopes of the mountains and the valley of the Wad Sus, are the Susi tribes, with which may be counted those of Haha, Mtuga and others. South of these again and extending along the northern limits of the Sahara and the valley of the Wad Draa are the Drauis, or as they are more commonly called amongst their own people, the Haratin, a name implying freemen as against slaves. It is to this division of the people that reference was made above when it was stated that one class could not boast of pure Hamitic origin, for so largely have these Drauis intermixed with the black tribes of the Northern Sudan that in type, as well as in colour, they show more signs of their negro than their Berber origin, though their language is more closely related to that of the other Berber people than it is to the Genauia of the Sudan.

Having now briefly dwelt upon the sections of the Berber race to be found in Morocco, some few words must be said as to their nomenclature and the terms they use in describing

themselves. While the name Berber is traced back to an original chieftain "Barbar" by some who have studied more or less this interesting people, they themselves generally know of no such fable as far as the writer's researches have been able to discover, though the division of the people inhabiting the central Atlas undoubtedly do, in speaking, use Berber (plural Berebber) as one of their names, though even here they prefer the term Shleh (plural Shloh) which in their language signifies "nobility." This term is common to all, even the Riffis using it of themselves, though less commonly than any other section of the people. A second, and as it were classical name, "Amazigh"—also meaning nobility,—is found, though it scarcely ever is used colloquially, being referred to almost solely when inquiries are being made from the people themselves as to their origin.

It may seem strange that a race which possesses vastly superior characteristics and qualities, should for these many years have lain under the yoke of Arab supremacy, and especially so when in certain parts of Morocco the population is entirely Berber. More than one reason, however, has tended to prevent any great rising of the Shloh people. Primarily they are devout Moslems, and although but rarely recognising the temporal power of the Moorish Sultans they reverence their Shereefian descent from the Prophet himself, and hold his person in a sort of sanctity which, so long as no payment of tribute is levied, is sufficient to prevent a rising. But what more probably influences their general bearing toward the Arabs and the Government is the state of eternal warfare existing amongst themselves. It is a case not only of tribe against tribe and family against family, but often even of individual against individual. And this proneness on their part to local strife is taken much advantage of by the Sultan and his advisers, who make a point of stirring up bloodshed by reference to ancient quarrels, or by promises for the future, in any case in which the amalgamation of two or more tribes seems likely to threaten either the throne or the Arab tribes. In places where the influence or arms of the Sultan have enforced a certain amount of nominal Government amongst the Berbers warfare is of every-day occurrence, and it may almost be asserted that every penny of the small taxation collected from them is only forthcoming after bloodshed. Even in such districts as the Government has been able to subdue, the representatives of the Sultan are members of the tribe they are commissioned to govern, as no stranger could even attempt to hold jurisdiction over so wild and turbulent a people. The position of the Berber governor of a Berber tribe is by no

means an enviable one, for between the constant demands for cash on the part of his superior government and the difficulty and danger incurred in procuring the same from a dissatisfied and rebellious people, his life is in daily danger from one source or the other, and while assassination by his own tribe's-people is bad enough, the horrors and tortures of the dungeons of a Moorish prison are even worse. The spirit and bravery, however, of these governors is not seldom shown, and it is only a few years ago that a "kaid," Ait Yussi, when besieged by his own subjects and finding all escape hopeless, blew himself and his family and castle to pieces by igniting the magazine, having previously opened the doors so as to fill the place with his enemy; while it is a well-known fact that the kaid of Glawa, one of the most important if not the most important Berber subjects of the Sultan, is often the first to climb the scaling ladder when besieging some rebellious castle in his own jurisdiction. But even in their warfare each division of the Berber race presents characteristics of its own. In the Riff, for instance, where bloodshed and blood feuds are of every-day occurrence, but few pitched battles take place, the avenger preferring to dog his enemy's steps, till, from behind some bush or stone, he is able to pull the trigger upon him. To such an extent have their blood feuds increased in the Riff that the people of the tribes of that country assert that no one's life is safe, for the very fact of relationship or tribal fellowship with another renders a man liable to lose his life at any moment. This is no doubt the reason why so many Riffis to-day inhabit Tangier, for here at least the laws of blood feud of revenge can be laid aside, though it is no uncommon occurrence that a would-be avenger will trudge the long mountain journey on the chance of a shot at his quondam enemy. Only a comparatively few months since certain members of a Riffi tribe journeyed to Tangier and took their revenge upon another family in the public market-place, where for some minutes a regular fusilade took place and several lives were lost. That the Riffis, in common with the other members of the Berber people, are possessed of great courage there is no doubt, for the manner in which they fought and practically routed the Spaniards in the vicinity of Melilla in 1894 clearly demonstrated the fact. The facilities with which they have been enabled to procure arms from smugglers from Spain and Gibraltar has rendered them more dangerous than ever, and there is scarcely a male member of any of their large tribes who is not possessed of a Remington rifle and a considerable amount of ammunition. Even in quasi-civilized Tangier the Riffi tribesmen carry European rifles, though it must be con-

fessed that they are an orderly body of men, and in spite of occasional bloodshed, tend much to keep the peace. They act as guards over houses and property, and woe betide the robber at whom is levelled a Riffi firearm. A picturesque group a collection of these Riffis make, in their dark "Jelaba," or hooded garments, and with their long scalp lock wound round their heads or tucked into the yards of yellow woollen thread which they wear in place of turban or tarboosh. As a rule of short or medium stature, they vary very much in colour and complexion, for while many are red-haired, red-bearded and blue-eyed, the majority are fair skinned but with dark hair and eyes. Their language, which they preserve and speak amongst themselves habitually, is incomprehensible in general to the remainder of the Berber people, though in individual words, and even in a few expressions, similar, if not the same. No writing in their tongue exists, though Riffia, as it is called, is when necessary written in Arabic characters, for throughout their country the religious class are taught to read the Koran—though many do not understand a word of what the Arabic means—and thus a knowledge of Arabic characters is gained. Although jealously guarding their country from European influence, and the Riff has never yet been explored—they seek, on emigrating to Tangier, work with Europeans and become most trusty and trustworthy servants, faithful and affectionate and ready to protect their masters by word or act. As a rule they take to gardening, though many become indoor servants, for which their quiet and pleasant manners, good looks and honest characters fit them.

While strict Moslems they do not seem to be fanatical, and are altogether in their natures much less passionate than their Arab neighbours. Their morality, too, is vastly superior to that of the Moorish townspeople, and they seem to appreciate to some extent the pleasures of home-life. The women do not as a rule cover their faces, except when in the town, or anywhere where the glance of Moorish eyes is likely to fall upon them In their own country the veil is practically unknown.

The wildest specimens of these Riffi tribespeople who are ever to be seen in Tangier are undoubtedly the traders in wood, who in summer sail along the coast in their clumsy boats with raised prow and helm, and bring the pine wood with which their country abounds for sale. There can be little doubt but that these very boats and very men are the same that are responsible for the constantly recurring acts of piracy off the Riff coast, for which the Sultan of Morocco is for ever paying indemnities. Even large sailing craft are attacked, the crews boarded hand and foot, and the vessel literally stripped of every-

thing except sufficient sail to carry the ship away, after the departure of the pirates. These Riffis of the Mediterranean are the sole survivors of the much-dreaded Barbary Corsairs of the olden days, whose pillaging is said to have been carried as far as the northern coast of Spain and the western end of the English Channel.

With regard to peculiar characteristics amongst the Riffis, the Moslem religion has obliterated most, for in accepting it they have accommodated themselves to the legal and religious rites incorporated in Islam. Therefore in such events as marriage ceremonies, etc., one may search in vain for some remnant of pre-Islamism. Their music has, however, survived in the Riff, where the double pipe of reed, and two ox horns, is still to be found, though nowhere else existing in Morocco. The form of their native-made guns is peculiar to themselves, though this must be, of course, a comparatively late distinction. In clothing they wear the exact counterpart of the Moorish mountaineers, with the exception of the embroidered woollen shirt in place of the cotton garment now in vogue, but even this is fast disappearing as European goods are gradually finding a market in their country. The only absolutely distinctive feature, then, about the Riffi is the "gitaya," or scalp lock, which is left to grow thick and long, and is either plaited and wound round the head or twisted into the "kheit," or turban of yellow thread. Beyond this, a peculiar look, to be recognised only by those who are accustomed to distinguish them, it is almost impossible to detect a Riffi from an ordinary mountaineer of Morocco, for although the latter speak entirely Arabic to-day, there seems little doubt that they share a common Berber ancestor with the Riffis.

Although these wild tribes of the Riff coast are the Berbers who most commonly come under the notice of Europeans, from their proximity to Tangier and the number who have settled there, they are by no means the most interesting of the Berber people, and to find the present representatives of the purest stock, where extraneous influences have borne but little or no effect, one must seek the wild and almost inaccessible country to the south of Fez, or the snowy heights of the Atlas Mountains and the country lying beyond.

Whilst the Berbers of the Riff and the Atlas are dwellers in fixed abodes built of stone or native concrete, those of the forests of Ait Yussi and Beni Mguild are largely a nomad population and reside in tents, while on the northern extremity of the Sahara, both sedentary and nomadic Berbers are found. When the haunts of the wandering tribes are visited by explorers, for so far all attempt to penetrate into their country has failed it

will certainly be there that the most typical and interesting characteristics will be found: for by their practice of retiring into the high mountains and dense forests on the approach of danger, these warlike and untamed people have never been conquered, and have therefore adopted less than any other portion of their people the Arab habits and customs, though in this case also their religion must have done much to make them forget and disregard their old traditions. But the fact that they have never come into contact with outside influences, with the exception of such Arab ideas as have penetrated into their country, must have tended much toward their retaining their primitive customs, and it is in that direction that the explorer interested in the history and folklore of their race must turn his steps. So little interest is paid to such subjects by the Arabs, and so little does one come into contact with these tribes in Morocco, that the greatest difficulty is experienced in collecting any notes upon them. Many inquiries on the part of the present writer succeeded in obtaining an account of only one ceremony which is not in common practice amongst the Arabs of Morocco. When after a wedding feast the time has arrived that the bride should proceed to the tent of the bridegroom, the entire company retires. The youth thereupon mounts his bride and himself upon a mare and gallops amongst the tents of the village, the girl screaming out the while and striking each tent three times with a stick, as if to call attention to the fact that she is being abducted by force. No one of the writer's informants could give any idea of the origin of the ceremony, beyond stating that "formerly" brides *were* abducted. A like custom exists to-day in the neighbourhood of Tangier. When the women congregate in the fields to weed the green barley or reap the crops, a straw figure, dressed like a woman, is taken with them. This figure is stood up in the field amongst the corn. Suddenly men appear from a neighbouring village mounted on horses and mares, and galloping into the field the figure is lifted on to a horse and stolen, amidst the screams and cries of the women. A fresh body of horsemen then appear upon the scene and the straw lady is rescued, and handed from one to another and fought for, until, generally in a very dishevelled condition, it is returned to the women again. No regular day is arranged for this pretended abduction, the time depending upon the state of the crops, but the day and hour are made public previous to the event. Each village formerly practised this mimic struggle for the possession of the imitation lady, but now-a-days it has dropped largely out of practice and is but seldom seen.

The writer's personal experiences amongst the Berbers has

lain almost entirely in the southern portion of Morocco, amongst and beyond the Atlas Mountains.

Although this district joins that inhabited by the Susis and the Haratin of the Wad Draa, the population belongs to the second division of the Berbers enumerated above, viz., those holding the central portion of the Atlas chain, and the country to the south and east, and thus more closely allied to these tent and forest Berbers both in language and character than either to the Susis or Drauïs. In appearance they differ considerably, for while the wilder section show distinctly the high cheek bones, copper complexions and narrow eyes of their Hamitic extraction, the generality of the Atlas and trans-Atlas Berbers show characteristics as much Semitic as Hamitic, and no doubt, though proud of their origin and retaining their language as well as their hatred of the Arab, they are tainted with Moorish blood. In costume they differ entirely from the Berbers of North Morocco, for here the short brown "jelab" or sleeved cloak joined in front and boasting a hood is replaced by long flowing robes. The "haik"—the toga-like garment both in shape and manner of wearing—or the long "slham" is worn over a cotton shirt or "chamira" which reaches the ankles, and which is very seldom indeed girded at the waist, the Shloh of this part having a great but inexplicable objection to wearing a belt or sash. In the higher Atlas the "slham" is replaced by the "khenif," a curious cloak of black sheep's wool, much decorated and betasseled, and bearing in the centre of the back a large oval patch in dull red and small designs in coloured threads or silk. This distinctive garment, which is only found in a certain part of the Atlas, is said to crop up again amongst the Berbers of a mountainous range in Tripoli.

It is in this part of Morocco too that the great "ksor," or castles, which the Berbers affect, are found. The origin of this style of architecture is a matter of conjecture, but it so far resembles the form of early Phœnician buildings as to point to that origin. Nor is it an improbable one, for it is more than likely that the early Phœnician colonists in Africa, and the Carthaginians, built themselves defensible fortresses, the manner and fashion of which has been handed down from generation to generation and is still adopted to-day.

Nothing can strike the explorer who succeeds in penetrating into these regions more than the first view of these strange buildings, which even to our European ideas are of great size. As a rule, there are many such "ksor" clustered together, forming a stronghold of whatever tribe may inhabit the district. They resemble one another in the form of structure very largely, what difference there is to be remarked being more in

size than in style. A square block of "tabia"—the native form of concrete—forms the centre of the building, at each corner of which rise towers, tapering from the ground upwards and ending in highly decorated and castellated summits. But few or no windows appear from the outside, though here and there are loopholes, used more for the defence of the place than for the purpose of admitting light. The lower storey rooms are usually absolutely devoid of any aperture save the door, which as often as not is closed, while the upper storey is lighted by holes in the roof which also answer the purpose of chimneys. Any intermediate storey that there may be is blessed with a few small narrow windows. The necessity of this inconvenience with regard to the supply of light and air is clear enough when some study has been made of the people, and their circumstances taken into account, for glass is unknown and the cold of winter intense, though more probably their architects are influenced more by their desire to render the building easily defensible and as nearly impregnable as possible, than by any ideas of comfort or convenience.

It is in this portion of Morocco, to the south of the Atlas Mountains, that tribal warfare is most rife, and it is seldom indeed that fighting is not occurring in some part or other of the barren inhospitable valleys of the southern slopes of the range.

During a visit paid a month or two since by the present writer to the Kaid of Glawa's stronghold on the southern side of the Glawi pass, he was able to collect many notes regarding the fighting propensities and manner of waging war existing in these regions. Space does not admit of any detailed description of the manner of attack and defence of the "ksor," but, as a rule, failing starvation or a breach, the place is carried by means of scaling ladders thrown up against the walls. What was more interesting than the descriptions of the actual fighting was the manner of the division of the spoil, for here the Berber character can be traced, the laws and customs regarding loot and suchlike being no doubt of great antiquity. First, with regard to the prisoners taken by either side. In a country where blood feuds are for ever being waged a life is worth a life, and a life spared means death as a rule to the sparer or one of his family. Thus it is that all males are put to the sword, or as a matter of fact stabbed to death with the curved dagger of the country. The women are allowed to go free, though women in child are as a rule sacrificed, for fear that another male may be given to the enemy; otherwise no women are touched. If, however, any girl or young woman is found pleasing by her captor he can claim her, though he is obliged to

marry her, and she becomes his legal wife, and any children she may bear him, his legal offspring. Very different this to the more revolting ideas of the Arabs, whose brutality to women prisoners is extreme. For the rest, all goods and chattels, cattle even, become the property of the first to lay his hands upon them, though the loot is as often as not shared amongst the victors. There is another feature in their warfare, however, that must be described, and which tends to lessen the idea of wilful cruelty that exists amongst these Berbers, and shows that, though all male prisoners are put to death, they do not take life needlessly, and that it is only of a necessity that these rigid laws are put in action. There are inhabiting these districts considerable numbers of Jews, who eke out an existence by the work of artificers and petty traders. As a rule they inhabit villages of their own, but it often happens that they are found within the walls of some "Ksor" after its fall. In this case their lives are invariably spared, and they are handed back to their co-religionists for a ransom, while, except in very rare cases indeed, the Jewish women are untouched, and allowed to return to their fellow people, and given an escort that they may do so in safety. The Berbers, one and all, express the loathing they feel for the butchery of their warfare, but feud and quarrel in sparsely populated districts render such, they think, necessary, for the advantage in numbers of even one man tells in their fights.

A word must be said as to the manner in which the Jews of these regions enjoy immunity from robbery and pillage, for no practical government exists. In their case, an ancient system known as "debéha," or "sacrifice," is in vogue. In plain words, the ancestors of Jewish families have, by means of "a sacrifice," fallen under the actual protection of certain Berber families who guarantee them from ill-treatment or robbery in return for a certain annual payment. Any injury to the Jew is looked upon as a personal matter, and the protecting Berber takes up the quarrel as if it were his own. The system is excellent, and the Jews reside in greater security in these wild regions than is the case where lawless Arabs rob and ill-treat them in other parts of Morocco.

There is yet another feature found throughout the Berber race in Morocco, of which mention must be made, and this is the "zitat" or "mzareg." Both words, though not originally meaning the same, have come to be identical in use, as terms for "safe-conduct." Thus, a stranger can, provided a member of the tribe is with him as "zitat," pass in absolute security through that tribe. "Mzareg," by translation "a spear," is a term that has descended from antiquity, and owes its origin

to the fact that in former times a member of the tribe would give his spear, marked no doubt by some tribal emblem and recognizable by the remainder of the tribe, to a stranger, and this article was sufficient as a guarantee that his life and property were safe. Any mishap that might befall him would be avenged by the owner of the spear. The same custom holds good to-day, though spears have long since disappeared. As a general rule a member of the tribe accompanies the stranger, though sometimes a turban or handkerchief are given, which are worn in some prominent position by the holder, so as to be apparent to all. The last district of which the inhabitants possess unadulterated Berber blood is the Sus, or wide valley and surrounding mountains that lie to the south of the western portion of the Atlas range. The population is here a sedentary one, the houses resembling as a rule the "ksor" described above, with the exception that little or no decoration is to be found, and the high towers are generally absent. The Sus valley possesses a large town, Tarudant, the population of which is almost entirely Berber, though the officials representing the Moorish Government are usually Arabs. The Susis are renowned as gunmakers, workers in silver, and as gardeners. They are as a rule short men of copper-coloured complexion, high cheek bones, and narrow dark eyes, and in this they show their Hamitic extraction far more largely than the Berbers last described. They have the reputation of being skilled astronomers, astrologers and doctors, and also of possessing charms for discovering hidden treasure. Their knowledge of astronomy is certainly very limited, but as to the other sciences and arts to which they lay claim—astrology and treasure finding—the writer's ignorance of the subjects does not allow of any fair judgment of their skill on his part.

With regard to the Haratin, or fourth division of the Berbers of Morocco, only a few words need be said, for so tainted are they by black blood that they have almost more in common with the negro than with their Hamitic ancestors. They inhabit the northern strip of the Sahara desert, their principal "ksor" being situated upon the Wad Draa. Their language, Shelha, largely mixed with the Genauía of the Sudan, is known as Drauia. Many of these people emigrate into Morocco and Algeria on account largely of the scarcity of cultivated and food-producing land in their own country. They become as a rule water carriers and gardeners, though they are willing to engage in any labour not needing great skill. They are honest, thrifty and shy, pleasant and good-natured but as a rule stupid. They seldom, if ever, become servants, with the exception of gardeners, and although sedentary in their own country are fond

of wandering from place to place, working a month or two in each, and finally returning to their homes with sufficient means to purchase a small portion of land which will allow of the production of enough food to hold life together. Such briefly are the Berbers of Morocco, a division of the Hamitic people well worthy of study and discovery, who have held themselves aloof from Arab and European alike, and whose wild country has been visited so seldom that the explorers who have reached any portion of it can be counted on the fingers of one's hands.

MARCH 30TH, 1897.

E. W. BRABROOK, Esq., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

A series of Photographs, by Mr. V. PORTMAN, Esq., illustrating the making of an Adze by the Andamanese, was exhibited and explained by Mr. C. H. READ.

The following communication was read by the Author :—

"The Diviner and his Rod," by T. V. HOLMES, Esq., and discussion was carried on by Professor RUPERT JONES, Messrs. COLLINGWOOD, HOWARTH and others.

Mr. HOLMES also exhibited and read a short paper on a curious case that had been used in smuggling whiskey between England and Scotland. A cordial vote of thanks was passed for the two papers.

APRIL 13TH, 1897.

E. W. BRABROOK, Esq., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The following communication was read by the Author :—

"Some points in connection with the Anthropology of the Kafirs of the Hindu Kush." The lecture was illustrated by the Optical Lantern.

The President thanked Sir GEORGE ROBERTSON for the paper he had read, and discussion was carried on by Messrs. CLODD CROOKE, BALFOUR, READ, COLLINGWOOD, LEITNER, and GOMME, and on the motion of the President a unanimous vote of thanks to Sir George Robertson was passed.

KÁFIRISTAN *and* ITS PEOPLE. By Sir GEORGE SCOTT ROBERTSON, K.C.S.I.

[WITH PLATES VII AND VIII.]

IT may not be out of place to begin this paper by reminding you that Káfiristan is a country consisting of an intricate series of valleys, side ravines and gullies formed by spurs of the Hindu Kúsh and their sub-divisions, which run down on the Indian side of that great westward continuation of the mighty mountain barrier separating India and Afghanistan from the rest of Asia. The exact technical geographical position of this country need not concern us here; the only point of chief importance, in that connection, is that Káfiristan is a highland region, subject to snowfall and severe cold in the winter, while the heat of the summer months, though great, bears no resemblance to that stokehold temperature which is common in India at an identical season of the year. You must please bear in mind, then, that this region is hidden away between Afghanistan, Chitral, Badakhshán, and the independent *Khanates* north of Peshawer, and has nothing in common with the India you are accustomed to picture in imagination.

In considering the manners and customs of Káfiristan, the influence of climate and of the physical characteristics of the country must not be forgotten, although the importance of these two factors in modifying the habits of a people, need not be insisted upon further before such an audience as this. Roughly speaking the climate of Káfiristan is temperate. The heat does not exceed that of Italy in the summer, nor is the cold at moderate elevations—say up to 7,000 feet—greater than that of some parts of Scotland in the winter. The rainfall is inconsiderable; the arable lands depend mainly upon snow water for their moisture. Irrigation, consequently, is necessary nearly everywhere. An almost complete absence of wind, in the deep narrow valleys, is the last peculiarity which need be now mentioned.

I have decided to make a somewhat unusual departure this evening, and to offer my information about Káfiristan in the form of a true story. That method seems to me best suited for the short time at my disposal. It will, I think, prove convenient to you also; perhaps more so than if I were to attempt to string together a series of bald dry facts upon a subject which is practically unknown to many here to-night. My story will be illustrated at the end, but the pictures are intended, not so

much to depict the actual scenes I am about to relate, as to give some general idea of environment and to amplify the narrative.

Once upon a time in the little hospital for women which, as is the custom of all Káfir settlements, lies just outside the village of Kámdesh, Kazhirbri, the wife of Lutkám, of the Demidári clan of the Kám people, gave birth to a little son. Her age was only sixteen, although she had been married several years, and had long ago put aside the fillet which binds the locks of the girl for the headdress which is the national symbol of womanhood. When she heard her child was a boy, her rapture was such that she became half unconscious, so well did she know, poor thing, the terrible lot of women in her country, neglected in childhood, overworked as field slaves when they grew older, and despised, badly fed and passively ill-treated all their lives, except for a few short days in early maturity when kind human nature brightens with love even the moral and physical degradation of a Káfir woman. Presently Kazhirbri roused herself a little, for the baby, wrapped in a fragment of half cured goatskin, was gently placed in her arms, and she knew that the ceremony of naming him was to take place. She hoped her boy might be called Merik, as that was the name of a youth she had dearly loved, but whom she never could have married, nor ever thought of marrying, for he belonged to her mother's clan, and everybody knows a Káfir may not marry so near a relative any more than he may marry into his father's or his father's mother's clan. Kazhirbri remembered that one of her husband's ancestors had been known as Merik, so she almost held her breath as she strained her head to watch the baby's lips, when a wise old woman began rapidly to mumble over the child's forefathers in proper order. For that one mentioned by the reciter at the instant the suckling began to feed, would be the infant's name for life. Alas! Merik was mentioned and passed; the infant commenced to drink when the word Lutkám was in the air, therefore he became Lutkam Lutkán, that is to say, Lutkám the son of Lutkám.

After twenty-one days mother and child returned home, the proper ceremonies having been duly observed. Kazhirbri was still weak, for she had been very ill. But the end of the year was approaching and the Indian corn crop still had to be carried, so very soon she was to be seen toiling along the steep inclines, the baby tucked into the front of her single tunic-like garment, and a huge load crushing down her fragile body. Her husband was a kind-hearted man, but he had only one other wife at this time, and she was very old, so Kazhirbri had to work long before she was fit to do so, while he went to join his

partner at the grazing grounds to bring back the flocks and herds from beyond a neighbouring pass before the snow came. For otherwise they might fall an easy prey to a marauder, because no others of the tribe would be near enough to help. Then came the cold weather and the bad food, which alone women get, only occasionally supplemented by the great public feasts given by rich men qualifying, in that curious way, for high social and religious rank in the tribe. So she never recovered her lost strength, but two years later, when small-pox was making its periodic devastation, killing or crippling children by the score, Kazhirbri also caught the disease and died.

As I have said, her husband was by no means unkind for a Káfir, so although he had noticed her long continued incapacity for hard work with something like resentment, yet as she was the mother of his only boy, that is to say, his only son who had not slave blood in his veins, he had always refrained from active unkindness, nor had he ever thought of selling her. Indeed, while she lay ill, he did everything he thought might save her life. He sacrificed a cow to Imra and distributed its flesh, he also lit a big fire in the dying woman's room, where he invited a large company to dance to the music of a couple of squeaking pipes, played by neighbours, while slaves banged an accompaniment upon drums. The guests shuffled and stamped till the sweat ran down their faces. Káfirs are always in splendid training, but the reek of that sick room tried even their sinewy frames. Yet nothing would appease the gods, and one night the firing off of an old musket told all who were interested in her fate that Chandlu Kazhirbri, Lutkám istri, that is, Kazhirbri, the daughter of Chandlu, the wife of Lutkám, was no more. Lutkám thereupon gave a feast, which is still remembered for the quality of the wine handed round. Everybody came, high and lowly, as the donor was universally respected for his birth, his wealth and for the number of enemies he had slain. Dead Kazhirbri, her thin waxen features just discernible amongst the gaudy shawls which covered the body, was raised on her bed, from time to time, while, to the sound of music, relatives and friends danced round the corpse, some in tears and with grief-convulsed features, but many smiling and happy. In the intervals orators extolled her family and her husband's ancestors, while her toothless old mother crooned lamentations intermittently.

Lutkám, the son, was too small to feel his loss. He no longer was carried daily to the fields nor did he trot home over the steep hillsides, steadying his baby footsteps by frequent grabs at the red edge at the bottom of his mother's skirt, which is at a height convenient for the hand of a two-year-old child. But

he was now the delight of his father, who never tired of carrying him about, or showing off or playing with the mannikin. It was amusing to see the way the man was tyrannised over by his pigmy son, who always got his way in the end. Once for instance, he insisted upon going too near Imra's shrine, where children are not allowed. The father got angry because a sacrifice was being made in the presence of a large congregation; he even cuffed the boy to drive him back. Speechless with anger and surprise, the little fellow stamped and raged until his repentant sire gave in, and let him go where he liked, before sobbing himself to sleep between the parental knees. All the bystanders, and even the great priest himself, murmured, somewhat dubiously, that Imra would never mind such a tiny child as that approaching his holy place.

Gradually the fat little limbs hardened, and the small frame grew sturdy and healthy, so that, except for a little ophthalmia and a slight eruption of the shaved head, Lutkám the younger became as pleasant to look upon as an average English boy. With the growth of the body the mind also expanded; his surroundings educated him. At first he shrieked at the sight of the great wooden effigies under the shed—the village Walhalla—and even when his own mother's image was erected a year after her death, although he enjoyed the fun of the dancing and the feasts, and ever afterwards felt proud of the size and magnificence of the statue—because it indicated the grandeur of his family—still for a long time he dreaded the glare of the round eyes made of white stones. Next, he learned to merely wonder at the grotesque objects, and to play about them without concern; finally, he came to despise all, except a very few of his own ancestral monuments, and even to throw stones at them.

Until the age of eleven Lutkám's dress was a simple goat-skin and nothing more. His pursuits consisted mainly of long absences with his father at the pasture lands, where dairy produce, which constituted the wealth, or at any rate the income, of the family, had to be looked after. In the winter, when the flocks were brought nearer home, much of the boy's time was spent in the village, where he gradually developed in skill and strength until a stone shooter and toy weapons were replaced by a good strong bow with a sheath of iron-tipped arrows. When his father's blacksmith slave forged him a dagger, Lutkám knew the delights of manhood. Henceforward darkness had no terrors for him: with dagger on belt he could wander anywhere at night, for Yush, the evil one, who lurks in rocks to seize hapless travellers, has no power against a Káfir wearing the national weapon.

In this same year three important events occurred. Lutkám became entitled to wear the clothes of a man, he went on his first raid, and his father was killed in circumstances I shall relate to you. A friend who was passing through the complicated ceremonies compulsory for all who desire to be "jast" (or headmen) allowed Lutkám to participate in that part which qualifies boys to put on trousers, so his forehead and shins were smeared with blood and he was acknowledged a man.

Often, while tending goats and cattle, his father or the servants had been obliged to be on the defensive against marauders; he had also seen one or two very loose hill skirmishes in the grey of the morning, and once all had to fly for their lives from Pathans who were following Lutkám's uncle to get vengeance for a midnight murder in their village; but times had changed of late years, strong kings ruled in Afghanistan and in Chitrál, and Lutkám had never seen a man slain. Shortly after he attained manhood, as above described, during a sacrifice to the war god, Gísh, the wild under-priest, who used to get temporary inspiration at such times, suddenly declared the god demanded more offerings, and had given the single mandate "Attack!" The tribal elders at once met in excited conclave to debate this subject. As all tried to argue, to declaim at the same time, the outcry was great. Only occasionally was there a lull when the stentorian tones of the high priest vanquished and stilled, for the instant, all other voices. It was finally agreed that the god's orders must be obeyed, and that a neighbouring Káfir tribe should be raided, as it was obviously out of the question to assault Afghanistan or Chitrál, while in the valley specified there was good prospect of plunder.

No sooner was this decision made known than every male rushed for his arms, messengers were sent hot foot to all the other tribal villages, and in an incredibly short time the fighting men had assembled and started. The female augurs of Badamúk declared the omens propitious, so the expedition left in happy consciousness of supernatural approval. All the women left the fields, donned every bit of finery they owned, or could borrow, to dance incessantly day and night to the gods, in order that the tribe might get much loot and the men come back uninjured. Many brandished daggers or axes. At midnight or very early morning, the fitful blaze of a bonfire flashed now and again upon gleaming steel, or illuminated, for an instant, horned head-dresses, and strange clad sombre figures, bowed with weariness, but moving with fantastic energy; female voices, tired, but shrilly discordant, added to the feeble drum tap of a slave boy,

were the only sounds as this Walpurgis witch throng flickered out of the heavy darkness to be at once reabsorbed into it.

It was only by extreme celerity that the warriors could effect a surprise. They numbered 480, of whom Lutkám was almost the youngest. A wilder-looking party it would be hard to conceive. About one-fourth carried old matchlocks. All had bows and arrows and daggers, a few possessed spears, there were not more than half a dozen shields altogether, and not a single sword was to be seen. Most of the men wore nothing but goat-skins—the hairy side out. These garments were confined at the waist by a leather strap, dotted with iron studs, which besides the dagger, supported small leather pouches, or narrow wooden tubes, strung together like pan-pipes, for carrying gunpowder or articles of no size. A few individuals of the richer class had coarse cotton shirts and short wide trousers of the same stuff, a dozen or so had Shín caps on their heads and Chitráli or Minjáni robes wrapped round them, but tucked up at the waist so as not to impede the knees in walking. No order was maintained.

The advance was led by light-limbed young braves, with one or two of graver years, whose words were even listened to with respect, for these men had terrible records, and one was covered with the scars of wounds. The swift noiseless step of the quick-moving Káfirs was strange to see: they moved as fast and silently as disembodied spirits, but their keen restless eyes, the frowning faces, the side to side head jerks, showed the concentration of their minds, and the eagerness with which they were searching the hill sides. They hurried along in single file, for the track was narrow. At a short interval came the main body with whom was Lutkám, and quite in the rear certain old men toiled along with one or two cripples whose physical infirmities compelled them to lag behind. For a boy Lutkám was a splendid walker, but he soon began to pant till he thought his breast would burst, and his shin-bones became like red hot iron bars.

For hours the march continued, along the face of terrible cliffs, through streams, or rarely over single pole bridges, and seldom across level ground for more than a few yards. Two high passes had to be climbed. At the second, poor little Lutkám fell down and was for some minutes unconscious, but he was hurried, encouraged or scolded by his father, and at length, without anything which could properly be called a halt, the Amzhi country was reached. The surprise was complete, the few Wai Káfirs about fled at once and an enormous booty in cattle and goats was collected. One or two shots were fired and all seemed over. Ardent young men wanted

to start back forthwith to be home first with the good news, but older hands looked anxious; they warned all to drive off the animals quickly and to keep together. Indeed, time was scarcely allowed to eat the thick cakes of bread or cheese, or the dried refuse of the wine presses. Such food was hastily dragged from small goatskin bags or from the receptacle formed by pouching up the body garment above the belt; it was swallowed rapidly while the eaters ran about and urged the animals forward. But soon shots fell near, and the enemy reinforced to his full strength, was upon them. Numbers were on the side of the raiders, but the Amzhi people were mad at the idea of losing their property. They raced along, high up the steep inclines, to charge down upon the front or sides of the convoy with the courage of desperation. Hand to hand fighting with daggers was occurring intermittently all along the line.

Furious as were the Amzhi, the captors raged at the thought of losing what they had won, and fought like Gísh himself. The two Lutkáms were at the tail of the convoy with a large group of fellow tribesmen. As they crossed a spot where the narrow track broadened into a small level space, formed by a little bay in the hills, with the river as the chord of the arc, a strong band of the enemy flashed down the slope and fell upon them with a wild outcry. Lutkám, the boy, knew hardly anything of what then happened, for a gun fired close to his ear deafened him, and he stood paralysed with fear. There was a flash of weapons, a gleam of passionate faces with staring eyes, much swaying to and fro, and then it was all over. Hardly a minute could have passed, but the boy's father was lying on the ground, limp and still, with three others. Poor Lutkám could not stir, he could only gaze fixedly. He saw a friend rapidly cut off his father's head and bear it away, someone dragged him by the arm, he was pushed and pulled; then the whole rear-guard went on again. At this point memory stopped; he indeed half remembers other short furious incidents, but perhaps they were dreams. He recollects how he arrived at his village and how all the women came out in tears, with great lamentations, to meet them. Then he slept. When he awoke, at least one day had passed, his legs ached with stiffness, one of his mothers (that is, one of his father's wives) gave him food, whereupon he fell asleep again.

After the funeral rites, which included the fixing of a straw man to the severed head, and much pomp and magnificence in the shape of gorgeous raiment for the lay figure, enormous public banquets, and interminable dances and orations, the poor fragment of humanity was carried to the above-ground cemetery, to be deposited in the family coffer with vessels containing food

for the sustenance of the dead man's ghost. Then the dancing began all over again round a stuffed figure strapped on a bed, for otherwise it would have fallen to the ground many times as it was energetically jumped up and down or whirled about by great warriors, who outvied one another in showing honour to the dead Lutkám in this national manner. At length all the celebrations were ended and the last old woman had finished mumbling the dead man's pedigrees, in conventional sorrow, so Lutkám the son returned to the ordinary work of life—for a year at any rate. Then the wooden effigy would have to be erected with lavish entertainments.

Being young he soon forgot his troubles. It was consoling to stroll about in a dignified way, with an old goatskin thrown over his cotton clothes as a mourning garment, and to receive the sympathy of the people. Much pleasure was also to be found in leading conversation to the recent obsequies of his father and to mention, casually as it were, what enormous cost had already been incurred, and then to guess at what the effigy feasts would mean in the way of expenditure.

He was not yet twelve years old, so his uncle (father's brother) took charge of all affairs. This old gentleman was reverenced in the tribe because of the wonderful number of people he had slain; he now added to the popularity, thus obtained, by distributing his nephew's goods, with a bountiful hand, under the guise of paying adequate respect to the dead. The boy did not mind; he knew he was still one of the wealthiest of the tribe, for his father had been a skinflint, as well as a dauntless blackmailer all along the frontier, not to speak of his great accomplishments as a thief. He had never been lazy or careless when there was a chance, however remote, to get plunder or to steal, while he would sometimes go near to starving himself and his family in order to save. As a result, there were immense flocks and herds, and the rarest cotton velvet robes, as well as gorgeous sham brocades from Peshawer, to be found in the rooms between the living apartments above and the cow stables on the ground floor, stored away in those great boxes which are used indifferently as receptacles for movable property or as coffins for the dead.

Lutkám now began to develop hereditary traits of avarice and cupidity; his soft boyish features had an odd mixture of childishness and business cunning. Of the four widows left by his father, Lutkám married one, thus becoming his own step-parent, so to speak, while his uncle took over the rest with the general management of the land. Lutkám's bride was three times older than himself, but a boy must of course have some woman to slave for him.

A year later a prime event occurred. Some Mussulmáns were travelling in the country under a doubtful permit. They were very brave or reckless men, bent on trade. Various Káfirs had received bribes from them, and had then gone away, but as no one uttered objections of any kind the merchants concluded all was right, or with Eastern fatalism determined to run the risk in the hope of big profits. One day before the party was expected at Kámdesh, five young men of good family started down the hill for a narrow level space of ground by the river's edge where certain overhanging rocks commanded the main path and afforded an excellent hiding place. Lutkám was taken also. Concealed in such a way that they could carefully watch the track by the water, the little company lay in wait all night and many hours afterwards. Villagers constantly passed by but did not see, perhaps did not care to see, what was going on. At length the traders appeared, one behind the other, four panting under loads, the fifth without a burden, as he was unwell.

Devoid of suspicion they reached the place of ambush whereupon the Káfirs fired with steady aim, the matchlocks rested on the rocks. Although the range was not 20 yards, and although each marksmen had had a particular Mussulmán assigned to him, only two men were killed, and a third wounded. Springing down from their hidden position the Káfirs quickly slew both the Mussulmán that was hurt and the other who had escaped the bullets altogether, but the sickly youth was a few yards behind his friends. He stood for an instant, as if turned to stone, then he leapt back and fled like the wind. But no powers of speed could enable a fugitive to escape thus in Káfiristan. This boy, for he was scarcely more than a boy, blundered off the right track, ran under a bluff, to find himself brought up at a precipice; he doubled, merely to fall into the arms of two pursuers who shouted over their shoulders to Lutkám, close behind them, "O Lutkám, strike! strike!" Lutkám came up, drew his dagger, hesitated a second—and struck.

This proceeding was admitted to be a dubious one, so there was no dancing to the war god. Reticence was maintained on the subject, and the incident itself came to be stoutly denied by all concerned in it, who found sufficient reward in the merchandise they obtained even after important headmen had been propitiated by gifts lest they should denounce the affair.

Far different was another exploit, a year or eighteen months afterwards, when Lutkám and his friends killed at night, as they slept, three tribal enemies in the middle of their own village in the Kunar Valley. That enterprise was hazardous.

for the Káfirs crept right in amongst the foe, therefore the least bungling with the dagger would have meant their certain destruction. As it was, they managed to sever the ears of the victims, and to bring away a turban cloth as well. Kámdesh was reached in the evening, so they had to stop outside the village all night, in accordance with custom. Time passed easily, for troops of friends came to admire and congratulate, food also was brought and splendid raiment for the next day's functions. All was cheery, and the heroes occasionally stood up to sing the song of triumph and thanksgiving. As the rather melancholy notes floated over the silent houses, every one knew that not only had Mussulmán enemies been slain but that the tribe had suffered no loss.

Early in the morning, decked out in finery, carrying ornamental axes, the young braves marched to the dancing house with all the women of their families, who were bright with washed faces and radiant with enthusiasm. Each female carried a small wicker basket full of wheat. The heroes deposited the turban cloth on the ground in front of the rough stone altar, and with the women stringing out behind in a semicircle, shuffled and stamped in the most approved style. When there was a pause, to recover breath, the women showered wheat grains over the young men. It was a purely domestic affair, and members of other families passed by with scarcely a glance at the happy performers.

By the time he was sixteen Lutkám had become one of the most *sup-sap manji* (cunning rascals) in the tribe. Not that he was a bad boy. Far from it. According to his lights he was an admirable youth. He never offended public opinion, and even his sale to Mussulmán traders of his two half-sisters (daughters of a slave mother) for robes, gunpowder, sham jewellery and goats, was much applauded by his tribe and kinsfolk, for it proved that he was a good trader, a keen bargainer. As a matter of fact, the Muhammedans knew perfectly well they were paying an exorbitant price for the girls; but they were glad to get them, at any cost, for the double advantage of obtaining female slaves and at the same time converting Káfirs to Islám.

About this time Lutkám fell seriously in love with a young woman of his own age, who originally lived in the Dungal Valley. But her home had been burnt, and she, with her family, forced to fly over the mountain ridge to the south of Kamdesh.

In former days to conciliate the Muhammedans, their near neighbours, the Dungal people clothed their women after the Nursat fashion, that is, in dark blue trousers which hung in voluminous festooned folds, a long over-skirt of the same colour

and a similarly tinted skull cap which covered long plaited locks. In this garb—which from motives of economy she still retained—adorned with white metal ornaments, Lutkám's *fiancée* looked a really pretty girl. Subsequent to their marriage, he and she, for a week or so, were so desperately in love that they made an amusing and interesting couple. I frequently at that time saw them seated together at a top verandah window. They were always laughing softly and every instant glanced at one another, perfectly oblivious of the rest of the world. Of course he could not be seen walking about accompanied by his wife, so when he went abroad Lutkám consoled himself with the society of his brother-in-law. After about a month of connubial happiness he quarrelled in a mild way with his wife's brother and left her to go hunting. Thereafter she was like any other Káfir's wife, a mere slave to her lord.

On the frontier, Lutkám blackmailed, stole, raided, and occasionally murdered. At home he gave huge feasts, bore himself well in quarrels, made love and danced with energy, and tried to swindle everyone of his acquaintance. Indeed, his sole fault was that he was an indifferent public speaker. In time he attained the rank of "jast," or elder of the tribe, and everyone said with a wise shake of the head, "When he is older Lutkám Lutkám will be a very big man." Finally, when the Amir of Afghanistan advanced his claim to Káfiristan, Lutkám fell upon evil days. Many of his relatives were on the side of the Amir; indeed it was through Kafir partizans that the Afghans conquered the lower part of the Bashgul valley, whereupon the tribes of the upper portion saw the uselessness of further resistance. Lutkám thought the matter over for weeks, even months, beforehand. He trimmed, lied and doubled in a way remarkable even for a Káfir; but in the end he was wrong. All his flocks were seized and he is now a refugee in Chitrál, where, at the instance of the Government of India, he has been provided with land and is fairly content. He is a typical Káfir of the well-born class. He has always been a good friend of mine, and on more that one occasion has given me much help. I also have been able to do something for him in return. I yet hope to see him again for he is still young, so perhaps some day we shall meet and I shall again watch him dance or swagger, hear him lie cheerfully, and find him in the future as in the past, an amusing companion, a capital talker, and a trustworthy friend.

Before showing you the lantern slides, I wish to make two or three remarks concerning them. I wish particularly to say that they are of real scientific value. In Káfiristan I took a very

large number of photographs. I also brought away with me specimens of clothing, weapons, household utensils, musical instruments, etc. It is especially from my photographs that Mr. McCormick has drawn the pictures, which I hope you will agree with me are clever and beautiful. To give you some idea of how they were done, I may mention that the drawing of the women dancing, the last of the series, was carefully constructed from about five and twenty of my photographs—snap shot photographs with a kodak. One or two of the slides have been made direct from my photographs—they consequently will appear less clear than those which have gone through the intermediate process of being drawn in black and white by Mr. McCormick. Mr. Simpson has taken great trouble in making these slides from Mr. McCormick's drawings, and I feel greatly indebted to him for his work.

Mr. WILLIAM CROOKE, after remarking on the interesting paper communicated by Sir George Robertson, suggested that it might, with advantage, include more detailed information on the popular religion and folklore of a people who stand as it were on the watershed of two faiths. That they have been to some extent affected by Indian influence is clear from their adoption from that source of the fairy known as the Yech, who represents the Yaksha of Hindu mythology, the attendant on Kuvera, the god of wealth. It would also be interesting to work out the extent to which they have been affected by Greek influence, which was obvious in some of the exhibits laid before the meeting.

Mr. J. F. COLLINGWOOD wished to ask a purely ethnological question. He understood that Sir George Robertson spoke of Tatars as the inhabitants of the region described. It seemed to him, the speaker, that most of the photographs exhibited indicated a semitic facies; but there was one especially of two young men which showed unmistakably Mongolian origin. Could the author inform the members as to the proportions of the racial mixture in those people?

Dr. LEITNER: I did not expect the treat that we have all enjoyed in having Káfir life and customs portrayed in the shape of a charming story—an admirable precedent that readers of papers on little known tribes would do well to follow. What I expected from the notice were such additions to the Anthropology of the Káfirs as "measurements," for, although those of the Dards and Káfirs, who are ethnically kindred races, that I now hand in to the able lecturer, and to this learned Society for publication in its Journal, are only those of twelve persons,

though typical of eight tribes, more are wanted, and would be hailed with special satisfaction by the Anthropological Institute. Indeed, it may be said that the subject of the Káfirs is one which this Institute has peculiarly made its own, and its late President especially, Dr. Beddoe, examined the Káfir Jamshéd, a nephew of the famous General Feramory, whom I brought home in 1872, with an anthropological minuteness that will ever be an example to the students of our science. Several of you may remember the narrative which he gave of his adventures in the Amir's service, and the appeal he made on behalf of his fellow Káfirs then already threatened by Afghan extirpation, enslavement, and displacement. I can only add that his account of Badakhshán, to which he lent an Afghan battery as a Major of Artillery, was the first, as it is still the fullest and truest account of that country that we possess. What he then predicted has come true, and in spite of the efforts of learned and philanthropic Societies, in which your President took a worthy part, the Káfirs, *as a nation*, exist no longer. The vestiges of Greek art, of which the tripod in Sir G. Robertson's most interesting collection here exhibited, as well as the dagger, oil-lamp and footgear, which I have now brought, bear witness, are being more and more obliterated; the picturesque multitude of gods or deified ancestors, whose equestrian effigies in a country where horses are practically unknown, show an antiquity of Centaurs, will be submerged in the monotony of Mahommedanism, although the national dances, of which Dr. Robertson has described some, will linger on, and vestiges of their Bacchic hymns, to which Col. Holdieb has alluded, and their dialects, which I have been studying, will, as also perhaps the inscriptions in an archaic Greek character referred to by Mr. Senost, may yet recall, for a time, the ancient colony said to have been founded by Dionysus at Nyssa, and rediscovered, as compatriots, by Alexander's troops. Increased by Hiram refugees from the south, Buddhist emigrants from ancient Kabul and Kandahar, and Zoroastrians from Balkh, the ancient Bactria—all from Mussulman persecution, the Káfirs have resisted encroachments by Afghans and Pathans for 1,000 years, at last to fall before modern weapons of destruction. On the confines of Káfiristan, diseases and many vices had before been introduced by their neighbours, and the Bashgalis were compelled by the Mehters of Chitral to raid certain travellers. Otherwise, they ever possessed the splendid courage, the domestic affections and the classical beauty to which Sir George also bears his valuable testimony. Indeed, in their joviality, love of money, drink, fun and sport, fear of public opinion and endless discussions in their local parliaments, they rather bear resemblance to their

English "brethren." They are certainly neither Semitic nor Turanian, as one or other of the speakers—certainly not Sir George—may appear to think. They are not even a branch of the Iranian subdivision of the Aryan family, but practically pure Aryans with a strong basis of Archaic Greek. The "Yatsh," to whom allusion has been made, are not the "Yuechi," or white Huns, but the "Yakshas," or the attendants on the Indian Plutus, Kuvera, the god of wealth: beings sometimes good and at other times evil, and forming a charming antithesis to their fairies. Mr. Clodd, for one, would greatly appreciate their folklore and that of the Dards, and an example of the anthropomorphic tendency of the Káfirs is their expostulation, when dying, on the Laghman side, "You may punish me, oh Deity, but I have enjoyed myself." (Cheers.)

Mr. READ alluded to the interest of any authentic records of such an interesting district as the Hindu-Kush, which, lying on the borders of so many different races, would from its physical character naturally preserve ancient customs and traditions likely to disappear in the more frequented tracks. Thus one might expect to find among the Káfirs traces of ancient civilisations like those of Persia, India, or Bactria, the latter art carrying with it an infusion of Greek culture. Any one familiar with the Lycian tombs brought home by Sir Charles Fellows,[1] and now in the British Museum, would at once see a strong resemblance between them and the Temple of the goddess Dizane. Such a resemblance might perhaps be a coincidence, but we find it somewhat confirmed by the shape of the tripod bowl used by the Diviner,[2] which would seem to be identical with classical objects of the same kind.

Description of Plates

PLATE VII.

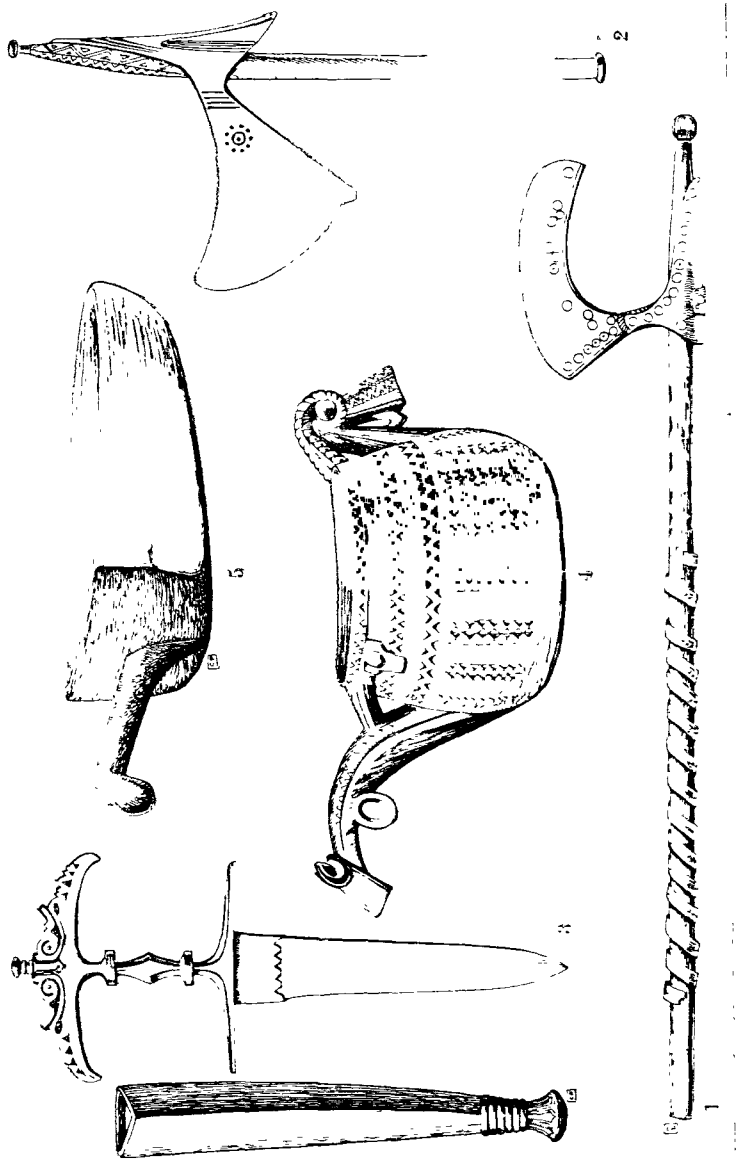
Fig. 1. Dancing Axe (KAZHA) used by KÁMGUL Káfirs, shaft of wood, spiral ornament and knob at top made of brass, as is also the blade, used exclusively for ornamental and ceremonial purposes.

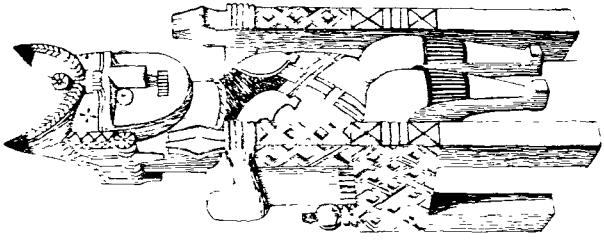
Fig. 2. Dancing Axe (KAZHA) used by BASHGUL Káfirs, shaft of wood, carved, upper end tipped above with brass, below with iron. The blade is of good steel with one or two brass studs for ornament, and when struck with the finger nail should emit a particular sound. These axes also are only used for ceremonial purposes or as symbols of dignity. They are highly valued and descend as heirlooms from father to the son who succeeds as head of family.

Fig. 3. Dagger (KATIR). The national weapon of the Káfir. Handle (KATIR MUSHT) iron; sheath (SHPIK) wood enclosed in iron or brass, except at back, often ornamented with silver studs; blade (PRUS)

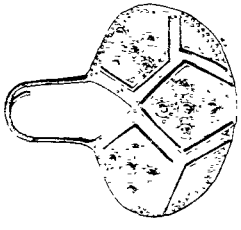
[1] *Vid* Fellows, "Travels and Researches in Asia Minor, more particularly in Lycia," London, 1852.

[2] Robertson, "The Káfirs of the Hindu-Kush," London, 1896, p. 421.

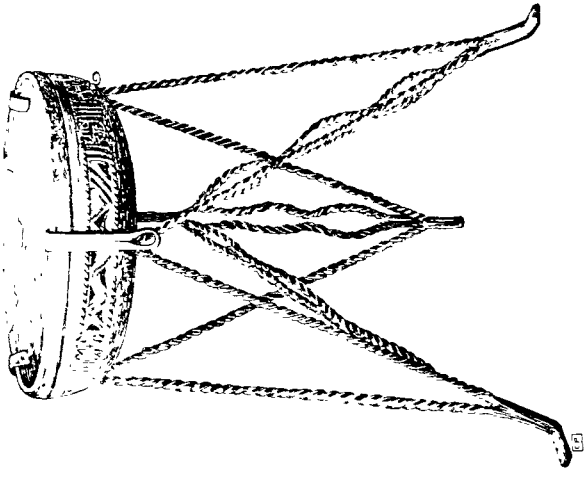




2



3



1

good steel, edge (AZHI) double point (CHÚR) strong. Used for every purpose for which a sharp-edged implement can be employed—for fighting, for a butcher's knife, for cutting food, etc., etc.

Fig. 4. Vessel for holding ghee (clarified butter). It is called in Káfir GANOLKALCHIK. Made of walnut wood elaborately carved. It is used as a domestic utensil and also at sacrifices to contain the ghee with which the fire is made to flare up.

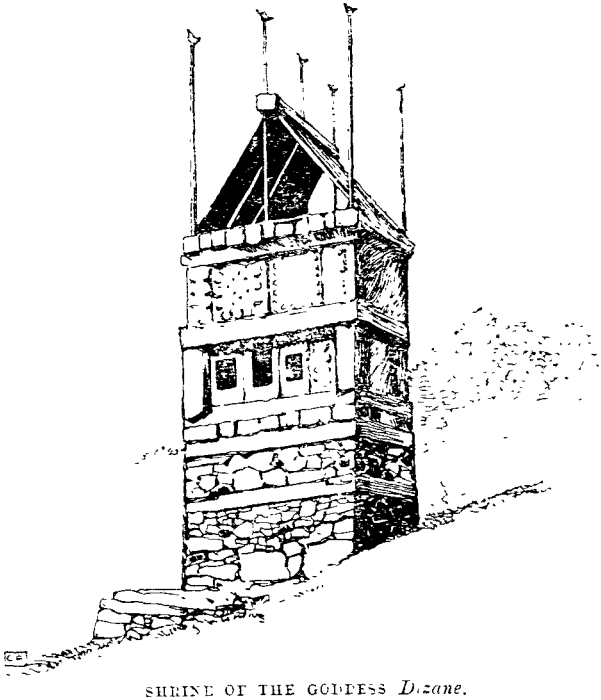
Fig. 5. Winnowing scoop (SHURUK) made of any wood. Unornamented. Used by women.

PLATE VIII.

Fig. 1. Ornamented tripod used by the Waigul Káfirs, legs iron, bowl carved walnut. It is intended to hold food at meal times. In the Bashgul valley wicker hour-glass-shaped low tables (CHÍRO) are employed for this purpose.

Fig. 2. Female effigy (JUKOR=WOMAN and DÁZI=EFFIGY). As this is seated in a chair it would be called SHINGIABAN DÁZI or PASHINGIABAN DÁZI. Erected to memory of deceased person, one year after funeral ceremonies. These effigies are of all sizes—some very large.

Fig. 3. Earring or brow ornament worn by WAIGUL Káfirs. Made of silver. The ornamentation is probably intended for mammary glands. Bashgul woman's large earrings are called CHUK, the small variety TUCH, and particular kinds have special names, KARMALI, KARWÁI, KARDUNAT, etc.



SHRINE OF THE GODDESS *Dizane.*

Discovery *of the* Lost Flint Mines *of* Egypt.

By H. W. Seton-Karr.

Although these implements have been last week shown at the Royal Institute and Royal Archæological Institute, this is the first occasion on which I have read a paper.

The implements from Egypt are from the long-lost flint mines which I discovered last November, with the assistance of Johnson Pacha and the Bedouins.

They are situated in the eastern desert of Egypt, some at a distance of about thirty miles from the Nile, some nearer, in the Wady-el-Sheik district.

During a period of three weeks, all the time I could spare, I made a fairly complete search and examination of the mines, from eight different camps. Many of the types of implements are new to science; I took specimens to Professor Petrie who was excavating at Behnesa. As they have become the property, as mentioned below, of the Liverpool Museum, together with the right of description, I am unable to say more, or give illustrations in the Society's publications.

The workings are in some cases along ledges on the faces of the cliffs; in other cases on level ground on the step-like tiers or plateaux, which descend from the high table-topped mountains to the dry sandy bed of the Wady-el-Sheik. These latter resemble the ruins of cities with walls and towers, overthrown by an earthquake, and present a fearfully desolate appearance.

The only vegetation is a scanty growth of desert plants in the watercourse of the Wady-el-Sheik. The only wild animals I saw for three weeks were a herd of ibex, a gazelle, a large straw-coloured mouse which came into the tent, and some horned vipers which the Bedouins killed to show me.

Of palæolithic implements, or the very earliest known, which we may reasonably imagine may date back one, two or three hundred thousand years or more, I only found two at the mines; the remainder at Abydos, Naqada, Nagh Hamadi, Thebes and other places in the western desert, where I also camped and spent a considerable time.

At some mines near camp No. 2, on my third expedition, are some shafts about 2 feet in diameter, filled up with drifted sand, and surrounded by masses of excavated rock neatly arranged.

Most of the mines had a central work-place where most of

the objects were discovered. There is one exception, namely, the clubs or truncheons which lay distributed uniformly in certain mines as though hurriedly left when the mines were last abandoned, which perhaps took place long before the historic periods. I therefore conjecture that each workman carried one attached by a thong, either as a weapon or a tool.

It is possible that Mr. H. O. Forbes or someone else may later on figure and describe the unknown types. They have been acquired for the Museum by the Corporation of Liverpool.

I have just seen Professor Petrie, and he assigns an enormous interval of time to the types represented, namely, from palæolithic ages to the 12th dynasty. Sir J. Evans, Sir H. Peek, Professor Sayce, Sir J. Lubbock and others have been here this afternoon and are prevented by engagements from attending this meeting. With regard to the truncheons the concensus of opinion is that they were used point-first, and from the positions in which they were lying, I have not the slightest doubt that they were the tools, one of which each workman carried. Professor Sayce does not agree with Professor Petrie, but considers that all the implements, without exception, are prehistoric. I shall probably re-visit the mines to map them.

Mr. ALLEN BROWN congratulated Mr. Seton-Karr on his most important and interesting discoveries in Somaliland and Egypt, and also archæologists generally on the valuable additions to our knowledge which had accrued from Mr. Seton-Karr's repeated journeys to East Africa.

His first discovery of Palæolithic Implements on or near the surface in Somaliland was startling, but still more so was the large mass of implements found in one locality in such a way as to indicate that there existed there a large settlement or "city," of these ancient men.

His discovery, too, of the old mines or quarries in Egypt was also a remarkable find, for there he not only met with the implements of Palæolithic type, but the tools with which the flint had been worked.

In looking over these large collections both from the settlements and the mines now exhibited, he (the speaker) was struck with the number of specimens, which appeared to be of intermediate, or as he had already suggested, Mesolithic types—between the Neolithic and Palæolithic forms—intermingled with those of Palæolithic types—pointing to the evolution and continuity of the existence of man in Egypt and elsewhere, the evidence of which he had laid before the Institute in 1892.

What is called (for want of a better definition) the Palæolithic period was one of indefinite extent and of enormous

duration, and the forms gradually changed; moreover, the pointed and other implements were not the work of a particular race or people, but represent the simple ideas and wants common to all, and their course of development or grades of incipient culture.

It would be interesting to know whether the flint at the quarries, which appeared to be an impure earthy variety, was found in layers in the chalk or limestone, as it is found in England, and also whether the ancient workers followed the lines of flint by galleries from the shafts where they found the most suitable material as occurred in the cave of Grimes Graves, near Brandon, where the miners left their picks of antler behind them, whereas the African miners appear to have used flint picks.

On the tables were implements of quartzite, and other much older rocks than flint, found at the settlement—it would be interesting if Mr. Seton-Karr could tell us whether such rocks were found in the vicinity, otherwise they must be accounted for by barter between tribes. Although the collection must be regarded as prehistoric and probably as beyond tradition, it was of interest to note that Somaliland, in which this large collection of stone implements had been discovered, formed part of the region which Professor Flinders Petrie believed to be "the sacred land of Punt," "the Land of the Gods," of the inscriptions, from which a very early immigration into Egypt took place.

Remarks were also made by Prof. Gladstone, Prof. Balfour Mr. Stopes and others, to which Mr. Seton-Karr replied.

Description of Plates.

Plate IX.—Fig. 1. Quartzite; Somaliland. Length, 7½ inches.
Fig. 2. Quartzite; Somaliland. Length, 5½ inches.
Fig. 3. Quartzite; Somaliland. Length, 7¼ inches.
(All now in the Museum, Melbourne, Victoria.)

" X.—Fig. 1. Quartzite; Somaliland. Length, 7½ inches.
Fig. 2. Flint. From the flint quarries of Egypt, discovered by Johnson Pasha. Length, 7¼ inches.
(Both in the Museum at Melbourne.)







Further Discoveries of Ancient Stone Implements in Somaliland. By H. W. Seton-Karr.

[with plates ix and x.]

From the results of my sixth journey into Somaliland, in search of palæolithic stone implements, I am of opinion that the large quartzite and flint implements of great weight and size and exquisite workmanship, and I believe the most perfect at present known, are to be found in one spot in Somaliland, and one only. This spot I have now thoroughly searched, with, I think I may say, surprising results, exceeding those obtained on the same spot twelve months before. The small implements which I first discovered all over Somaliland were thought to be neolithic. During my fifth expedition I discovered this palæolithic settlement whilst tracking lions.

When those first discovered were brought home for examination, they were thought from their appearance and type, and from the condition of their discovery and situation, to be of palæolithic age. The Treasurer of the Royal Society then made a communication to that body stating[1] that the implements were absolutely identical with some from the valley of the Somme, from the laterite deposits of India, the North London Gravels, Central Italy, the valley of the Manzanares in Spain, the valley of the Euphrates, and the Pleistocene deposits of N.W. Europe, and that we need no longer hesitate in claiming them as palæolithic. I have now made a further examination of the geology of the district, and brought some specimens of rock from the strata exposed.

In papers previously published in this Journal, I stated that stone implements were found all over Somaliland; all that I found, however, elsewhere than in this one spot were thought to be of early neolithic age. These were small though numerous, and are not met with in any quantity in this one spot where the 2 lb. and 3 lb. implements 6 and 8 inches in length are so numerous and perfect. This spot I will now describe. It is not a palæolithic workshop because there are no chips here, but the place has many natural advantages, and was, I think, a stronghold of primæval man.

I think I may say I have now run palæolithic man "to earth" in tropical Africa, so far as I know for the first time. This implementiferous place is on the western face of a low hill, forming the right bank of the Issutugan, distant 85

[1] "Proc. Roy. Soc." Vol. 60, p. 20; "Journ. Anthrop. Inst.," xxii, p. 271, &c.

miles in a straight line S.W. of Berbera, which is the best harbour on the coast, and about 75 miles or four days' march with camels from Bulhar, which I chose as my point of disembarkation as being nearer the scene of operations. The present bed of the river lies about 200 feet below, and in prehistoric times may have been a large stream.

On this hill, free from river action, deposition or denudation, they may have lain in safety for 200,000 years. This implementiferous hill commands the finest view to be had in the district. On the west the horizon consists of districts claimed (wrongly) by the King of Abyssinia: 80 miles east can be seen the blue outline of Golis, over 6,000 in height: the south is bounded 20 miles away by the cliffs bordering the great waterless plain, and on the north can be seen the tremendous basaltic gorges through which the Issutugan finds its way towards the maritime plain of the Red Sea. This favoured hill is about 3 miles in length, and is surrounded on three sides by sand-rivers—the Bolgasham, the Dago, and Issutugan, in which even in this arid country there is always an abundance of good water. The hill is of limestone, but covered to a great depth with alluvial deposits much solidified, and containing boulders of flint and quartzite; these boulders occur elsewhere, but this earth deposited in ancient times seems here of unusual thickness, many other parts of the country consisting of bare rock thinly covered with vegetation. This ridge or hill seems to have escaped denudation, except by rain drops, which has sufficed to lay bare the implements which were generally in twos and threes raised on little pillars of earth, like stones on a glacier, or lie on the bottoms of innumerable little gullies. It is about 3,000 feet above the sea, and as Dr. Gregory has stated, has never been under water since the Neocomian Period.

I spent about nine days here in systematic search, and found no chips and few hammer-stones and almost all the implements were large and perfect. Having completed the search of the entire district, it was as much as my camels could manage to transport the implements to the coast.

M. Dupont has a few implements at Brussels from the Congo region, but these he believes to be of later or neolithic age.

Somaliland has been well traversed, and an excellent map has been made of it by Captain H. G. C. Swayne, and an accurate description of the physical features of Somaliland has been given in his lately-published book, "Seventeen trips in Somaliland." Colonel A. Paget and many other travellers to whom I mentioned my discoveries, showing them specimens of

these large flint and quartzite implements, have crossed and recrossed the country in every direction. But neither they nor I during my six expeditions have discovered a single large palæolithic implement, excepting on this one spot, to which I alone have hitherto had access.

I have little expectation of making any further finds of ancient stone implements in these districts until the interior of Abyssinia is opened up to ordinary travellers.

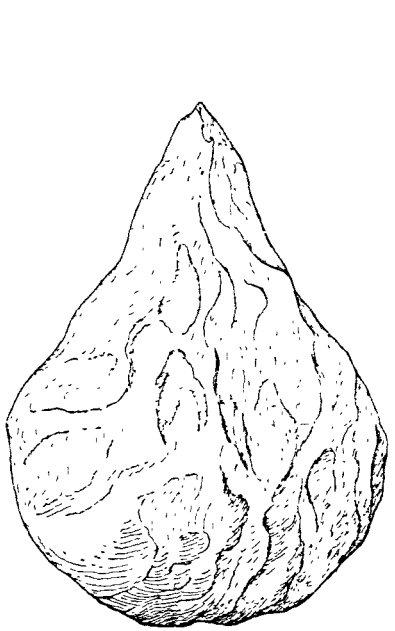


FIG. 1.

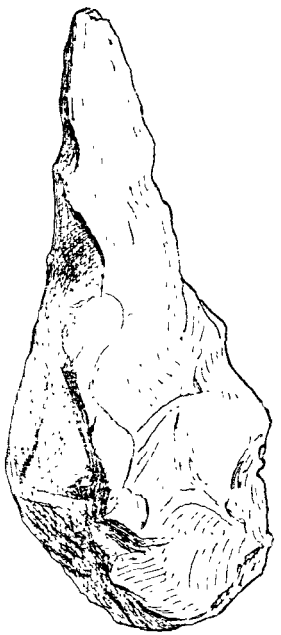


FIG. 2.

Fig. 1. Quartzite, Somaliland. Length, 5¼ inches.
Fig. 2. Somaliland. Length, 6¼ inches.
(Both in Museum at Melbourne.)

On the ANTHROPOLOGY *of* BRITTANY. By Professor PAUL TOPINARD, Honorary Fellow of the Institute. Communicated by J. G. GARSON, M.D.

THE following communication, in the first instance addressed to me, contains observations of so much interest and importance as to merit the widest publication we are able to give it. I have, therefore, no hesitation in presenting it to the Institute for reading and publication in our Journal, as I feel confident that the observations of so eminent an observer and anthropologist as Professor Topinard will be read and studied by his fellow-workers in this country and elsewhere with the care and attention they deserve, and be regarded as a valuable contribution to our knowledge of the Anthropology of a portion of North-Western Europe. In order that anthropologists may have Professor Topinard's views before them, as expressed by himself, and without any modification such as might unintentionally be imparted to them in translation, I have thought it desirable to present his paper in the original French in which it was written. —J. G. GARSON.

MON CHER COLLÈGUE,

J'arrive de la Bretagne, que je visitais pour la quatrième fois, et j'en rapporte des impressions nouvelles qui, rapprochées de mes précédentes, et de ce qui a été publié sur ce sujet, me permettent cette fois une vue d'ensemble.

Ces tournées d'un côté ou de l'autre sont mes vacances annuelles; je n'ai pas la prétention d'y travailler *secundum artem*; je n'emporte aucun instrument, je ne remplis aucune des feuilles d'observations que, vous et moi, nous prescrivons; je ne fais pas même de pointages, à la façon du Dr. Beddoe. Je me borne à regarder les dimanches à la porte des églises, les jours de marché et les jours de *Pardon*, qui sont, comme vous le savez, des occasions de rassemblement de toutes les populations environnantes, et à prendre des notes sur les types que je parviens à démêler et à opposer les uns aux autres. Je ne puis donc parler d'indices, ni de mesures, et faire intervenir la statistique; je manque des éléments voulus pour faire un mémoire, et cependant les résultats auxquels j'arrive méritent parfois d'être enregistrés. Tel est le cas, je crois, aujourd'hui.

Elles doivent vous interesser. Vous êtes l'un des anthropologistes anglais les plus versés dans la connaissance des

races présentes et passées des deux côtés du Détroit. Le résumé que vous avez fait, il y a un an, dans vos Lectures au Royal Institution, des caractères des deux races anciennes, néolithique et du bronze, de l'Angleterre concorde avec mes appréciations personnelles sur les deux races correspondantes de France, à la seule différence près qu'j'assimile votre type néolithique non au type de Cro-Magnon, mais au type des Troglodytes de la Lozère. L'anthropologie de la Bretagne et l'anthropologie de l'Angleterre se touchent par un autre point. La race historique qui a changé le nom d'*Armorique* en celui de *Bretagne* est celle qui a règné en Angleterre du 2ème ou 3ème siècle avant J. C. au 4ème siècle après, et qui alors a été refoulée par les Anglo-Saxons en partie dans le Pays de Galles, en partie dans la Cornouaille, d'où l'émigration bretonne est partie pour l'Armorique.

De là mes motifs pour vous adresser, à vous de préférence, la présente lettre, que vous communiquerez à l'Institut Anthropologique, si vous le jugez à propos.

Je connaissais la plupart des points du littoral de la Bretagne de St. Malo à Nantes. Deux seulement m'étaient inconnus: la région de Paimpol et de l'île Bréhat et la région de Pont l'Abbé, où sont les célèbres Bigoudens, problème mystérieux qu'aucun anthropologiste n'avait encore sondé. Quant à l'intérieur de la péninsule, où se seraient réfugiées les populations de la côte, refoulées par les envahisseurs du 4ème ou 5ème siècle, je l'ignorais complètement: aucun voyageur compétent n'ayant pu me renseigner sur elles. Ce sont les trois points que j'ai principalement visités cette fois. Au centre de la péninsule j'ai rayonné de Carhaix, j'ai parcouru les Montagnes Noires, les Montagnes d'Arrhée, Huelgoat, Château Neuf, et Pleyben, et j'en suis revenu édifié.

Voici comment aujourd'hui je me résume sur les types actuels de la Bretagne, à l'ouest de l'Ile et Vilaine, dans les départements des Côtes du Nord, du Morbihan, et du Finistère.

Je rappelle tout d'abord que pour moi il n'y a pas de population, ni même peut-être d'individu, absolument pur; et que le type est une quintessence de caractères que nous supposons réunis au complet sur un individu ou dans un groupe idéal. Le type ne doit pas être confondu avec la moyenne d'un groupe réel dans laquelle des caractères opposés se neutralisent réciproquement.

Deux types généraux tout d'abord se constatent en Bretagne. L'un de taille moyenne, au visage long, quadrilatère, et aplati, que je désigne par la lettre A. L'autre de petite taille, au visage relativement court et rond, mais triangulaire par en bas, que je désigne par la lettre B.

Le premier, ou type A, a, dis-je, le visage—c'est à dire, l'espace compris entre les cheveux et le menton—long, mais sans que cette hauteur atteigne celle du type général des races blondes ; quadrilatère—c'est à dire que tout en ayant le visage oval, celui-ci est, ou paraît, carré du haut et du bas, et a les côtés sensiblement verticaux et parallèles ; large à la fois au front et à la mâchoire, et à peine plus aux pommettes, qui sont massives, saillantes et haut placées, sans que, cependant, on puisse dire la face chamœprosope ; et enfin plat dans son ensemble, ce qui tient principalement au faible développement du nez, et au fort développement, au contraire, des pommettes. Le front est bombé, découvert et lisse. Les arcades sourcilières et la glabelle sont marquées, mais plutôt petites. Les sourcils sont hauts, mal dessinés, maigres, et parfois arqués ou relevés en dehors. Les cils sont peu apparents. Les yeux sont petites et mornes.

L'intervalle oculaire est large sans excès, et généralement plat. Dans cet intervalle le nez commence par une racine peu accusée, s'élargit de suite en descendant, pour se terminer par une base et des ailes fortes. Ce serait un nez mésorrhinien : le dos en est droit ou concave. Bouche un peu en saillie. Lèvres forts. Dents grandes, et se découvrant facilement. Mandibule large et forte. Menton gros. Enfin le teint est d'un blanc-mat chez les sujets non hâlés par le soleil, les cheveux sont châtains ou rouges les yeux sont neutres ou clairs, souvent bleus.

Comme proportions générales la tête est grosse, le cou plutôt court, les épaules plutôt larges et carrées, le tronc haut, les membres modérément courts, forts, et lourds, les extrémités grosses. En somme, de corps et de visage, ce n'est pas un beau type.

Le second type, ou type B, est joli, au contraire, sous ces deux rapports. La tête est petite, les traits sont fins, les yeux sont vifs et expressifs, les formes agréables et souples, les extrémités petites. Le tronc et les membres ne sont ni sveltes, ni trapus, mais intermédiaires et bien pris de proportions. Dans l'attitude, il y a à la fois de la noblesse et de la pétulance.

Avec la taille petite, le visage est sa vrai caractéristique. De forme ovale, plus ou moins arrondie dans les parties supérieures, il se resserre au dessous des pommettes en un triangle, dont le sommet est au menton. Les sourcils sont noirs, bien dessinés, horizontaux, et bas placés. Les sourcils sont noirs. Les yeux sont petits, mais plus ouverts que dans le type A, et à bords palpébraux bien arrêtés ; leur angle externe est quelquefois en amande : ils semblent souvent logés dans des orbites profondes et microsèmes. L'intervalle oculaire est étroit par comparaison avec l'autre type, et occupé à son milieu par la saillie étroite de la racine du nez. Le nez petit dans son ensemble,

étroit dans ses deux tiers supérieurs, à dos quelquefois droit, généralement concave, parfois retroussé, se termine par une base et des ailes peu développés. Les os malaires sont petits, fuyant sur les côtés, et ne proéminent un peu qu'à cause du resserrement qui est au dessous. La bouche, les lèvres et les dents sont petites, les deux mâchoires sont étroites, le menton est petit et rond. Enfin le teint est brunâtre par comparaison avec le type A, et animé, les yeux sont généralement bruns, et les cheveux bruns, quelquefois noirs.

Les deux types généraux sont très répandus; le premier principalement sur les côtes et à une petite distance, le second au centre de la péninsule. Mais ils s'envoient mutuellement des prolongements qui s'entrecroisent, et s'enchevêtrent.

Dans mes premiers voyages j'avais bien reconnu le type A, et le considérais comme le seul type général actuel Breton. Le type B m'a été révelé dans mon dernier voyage à Carhaix et dans les environs; il m'a rappelé à l'instant une photographie que j'avais achetée jadis, et qu'un Breton à Paris m'avait indiquée comme étant le type des environs de Rennes. Une fois calqué dans mon esprit, je l'ai retrouvé un peu partout, même là où j'avais passé précédemment sans le voir.

Les deux types A et B se mêlent de tous côtés, bien entendu et donnent lieu à une foule de sous-types intermédiaires, le plus grand nombre individuels, beaucoup constituant des types propres à tel ou tel localité. Mais avant d'insister sur ce point, décrivons deux types spéciaux, rares, qu'il faut mettre à part.

L'un, que je désigne par la lettre C, se résume ainsi: Taille élevée, parfois très élevée. Tête absolument grande, mais relativement petite. Cou long. Tronc relativement court. Membres longs. Épaules et thorax étroits. Visage haut et étroit, à pommettes petites et fuyant en arrière, autrement dit franchement leptoprosope. Nez fort, haut, saillant, et leptorrhinien. Teint fleuri, se brulant au soleil en se couvrant d'éphelides et d'écailles cutanées. Cheveux blonds ou châtains. Yeux bleus ou clairs. C'est le type classique des races blondes, sans préjuger de ses sous-types. Il est connu sur les côtes septentrionales de la Bretagne, et même occidentales, sous le nom de type anglais.

L'autre, que j'appelle D, est celui des Bigoudens de Pont l'Abbé, ou mieux d'un certain nombre d'entr'elles. Notons d'abord que les femmes Bigoudens ont l'habitude de porter, depuis l'âge de 5 ans, une coiffure qui presse les tempes, atrophie la région parotidienne, et tend à repousser en avant la masse des maxillaires: qu'il en résulte une modification de leur type facial, pas beau par lui-même, mais enlaidi encore

par cette coutume, et qu'en conséquence il faut en tenir compte lorsqu'on observe la femme.

Le type D se résume ainsi : Taille petite, mais moins que que dans le type B de Carhaix. Cou court et charnu. Épaules hautes, fortes, et carrées. Membres courts et charnus. Extrémités fortes. Tronc long. Tête grosse. Visage plein, rond Pommettes fortes et saillantes. Mâchoires larges. Front développé. Nez petit, un peu écrasé dans toute la hauteur, large en haut comme en bas, mésorrhinien. Yeux petits, chiffonnés. Arcades sourcilières et glabelle développées échancrure de la racine du nez prononcée. Intervalles oculaires plutôt larges.

Il y a des années, j'étais à Concarneau avec deux professeurs de l'université, l'un le regretté G. Pouchet, qui avait précédemment publié un mémoire d'Anthropologie sur *La Pluralité des Races Humaines*. Ils avaient tous deux été frappés de la face aplatie, des pommettes saillantes, des yeux petits et comme bouffis de plusieurs Bigoudens qui travaillaient dans une sardinerie voisine, et me disaient : "Que faites vous de ce type ? Ce sont des Mongols." Cette année, un des auditeurs de l'École d'Anthropologie, que je rencontrais à Penmarck, me parlant des Bigoudens de Pont l'Abbé, me dit. "Ce sont des Auvergnats." C'est celui-ci qui avait raison. J'ai visité l'Auvergne. Les Bigoudens sont bien des Auvergnats.

Nous avons dit que les deux types généraux, A et B, se mélangent partout, soit chez les individus, soit en formant des sous-types locaux disséminés de côtés et d'autres. Il est évident que les deux types accessoires C et D doivent intervenir çà et là aussi, et accentuer les diversités. Il en résulte qu'en Bretagne, comme partout, chaque individu, chaque groupe partiel est un problème. À quel type faut-il le rattacher ? Combien pour cent chez lui entre-t-il de tel ou tel type ? Et cependant dans aucun autre pays peut-être que j'ai visité les types ne me sont apparus avec autant de simplicité et d'homogénéité. En Bretagne, en présence d'un caractère singulier, contradictoire avec l'ensemble, l'esprit n'a pas à errer dans des directions nouvelles, et n'a pas à chercher loin ; la combinaison en proportions diverses de ces quatre types explique tout. Ainsi au Cap Sizun (canton de le pointe du Raz) à Pont Aven, à Fouesnant, où l'on admet volontiers des sous-types, l'association des types A et B avec plus ou moins de prédominance du second, et çà et là quelque addition du type C, rend compte de ces sous-types. Parmi les Bigoudens eux-mêmes, à côté du type D, qui en forme le fond, se rencontre fréquemment le type B, un mélange des types A et B, et un mélange même des types B et D, sans parler des troubles

qu'apportent parfois les yeux clairs ou bleus ou la taille élevée du type C.

Il nous reste à préciser l'origine, ou à rechercher les éléments constituants, de nos quatre types. Pour les deux C et D la réponse est facile : nous l'avons préjugée de suite.

Le type C est celui des races blondes. Dans ces termes généraux, c'est évident. Pour nous, les Blonds ont fait leur apparition, tout au moins en France, plus loin dans le passé qu'on ne le croit généralement. Les hautes tailles dans certaines grottes de la Vézere, Cro-Magnon entr'autres, ne peuvent venir que d'un croisement avec des blonds. La civilisation, et en particulier la religion des dolmens, doit avoir été apportée par des blonds. Si dans les dolmens on rencontre des individus présentant des caractères ostéologiques contradictoires, c'est qu'à la même époque existaient parallèlement d'autres populations avec lesquelles ils étaient mélangés. Dès le 8ème siècle avant notre ère, les blonds sont signalés sur les côtes de l'Armorique. Ultérieurement l'arrivée des Blonds est indiquée dans le pays de Vannes. Enfin, au 4ème ou 5ème siècle de notre ère a eu lieu l'émigration des Bretons d'Angleterre, qui donnent à la péninsule son nom actuel. Parmi les Blonds, lesquels principalement ont laissé le type C que nous avons constaté ? Lesquels ont dispersé un peu partout, et spécialement le long des côtes, leurs cheveux blonds, leurs yeux bleus, et leur hautes tailles ? Les cartes de la taille ne le disent pas. Celles sur la couleur, que nous avons publiées par départements, et faites par arrondissement pour notre usage personnel, ne le disent pas davantage, je l'avoue. Une carte par cantons seule pourrait éclairer la question sans la résoudre totalement.

Le type D est, avons-nous dit, celui de l'Auvergnat, nous pourrions ajouter, et du Savoyard ; autrement dit, de ce qui, au jour actuel, représente le mieux probablement l'ancienne race brachycéphale, venue sans doute d'Asie, vers la fin de l'âge néolithique en France, à l'âge du bronze en Angleterre. Comment s'est il conservé à l'état d'îlot dans le pays de Pont l'Abbé ? Nous l'ignorons. Peut-être les sépultures mégalithiques si communes dans cette région nous donneraient-elles quelque indication, si les ossements qu'on y recueille étaient moins brisés ?

Les deux types généraux A et B se présentent dans de toutes autres conditions. Ce sont des produits du temps présent, des types actuels confirmés, ce qui par parenthèse prouve que sous nos yeux prennent encore naissance, quelqu'en soit le procédé, des types nouveaux. L'origine du premier, du type A, tout d'abord est tres claire, c'est une combinaison des types C et D. Au type D appartiennent la tête grosse, la face aplatie, les

pommettes massives, ne fuyant aucunement en arrière sur leur côté externe, le nez un peu écrasé, et souvent concave, épais dans toute sa hauteur et mésorrhinien, le front large, la mâchoire large aussi, et carrée, le cou court, les épaules hautes et larges, le tronc long, les membres courts et trapus, les extrémités grosses et la démarche lourde empesée. Au type C se rapportent la taille plus élevée que dans le type B, les cheveux châtains, les yeux clairs, et souvent bleus, le teint blanc-mat, par diminution générale du pigment, le nez haut, et surtout l'allongement vertical de la face, tel que n'était-ce les pommettes ce serait un visage leptoprosope. À une combinaison, enfin, des deux types se rattache la forme quadrilatère du visage. Le type A, en définitive, aurait conservé du type de la race brachycéphale ancienne prédominante comme nombre, davantage qu'il n'aurait pris au type des races blondes, moins représentée comme nombre. Parmi les individus du type A, il en est qu'on prendrait encore pour des Auvergnats, ou, si l'on préfère, pour des Bigoudens Ce qu'il faudrait établir c'est que des deux types A et B c'est lui qui a l'indice céphalique le plus élevé. Or les seuls documents précis que nous possédions sur cet indice en Bretagne portent sur la région où nous avons trouvé ce type le plus frappant. Les moyennes y dépassent sur le crâne le chiffre 80, c'est à dire qu'elles sont toujours brachycéphales. Toutes les séries de Bretons de Broca, auxquelles je fais allusion, viennent des côtes du Nord, où je l'ai d'abord remarqué.

Le type B est embarrassant, au contraire, à première vue. C'est quelque chose de spécial. Il n'a rien des races blondes : la taille est petite, les yeux sont bruns et profonds, le visage n'offre pas le moindre trait de ressemblance avec elles ; la structure générale du corps et des membres est tout différente Il n'a rien non plus de l'Auvergnat, sauf peut-être le front plein et arrondi ; la physionomie est charmante ; les yeux sont doux et vifs tout à la fois ; la mâchoire inférieure est petite, étroite, et en pointe ; les proportions du corps et les extrémités sont fines. En révanche, il a beaucoup du type méridional d'une manière générale, et surtout d'un certain type que j'ai déterminé sur une grande série de crânes de la Haute Italie, et que j'ai retrouvé sur le vivant dans les montagnes de la Ligurie. D'autre part il rappelle par plusieurs de ses caractères le type de la race néolithique de L'homme mort dans la Lozère, type que j'ai retrouvé çà et là sur des crânes espagnols, suédes, et berbers de Biskra. Ce qu'il importerait de savoir c'est si, comme je suis porté à le croire d'après le vivant, ses orbites sont microsèmes et aussi s'il est dolichocéphale, ou tout au moins à un indice sensiblement plus bas que le type A. Aucune série de crânes de Carhaix, ou de ses environs, n'a

encore été recueilli. On a bien dit que l'indice céphalique de l'intérieur de la Bretagne était moins élevé que celui des côtes, mais sans preuves directes suffisantes.

Or il parait vraisemblable que la grande race brune de Midi, que j'ai appelé *Méditerranéne*, et qui a occupé tout le bassin occidental de la Méditerrannée, les Canaries, l'Algérie, l'Italie, la Corse, les Baléares, l'Espagne, la Ligurie, et tout le sud de la France, notamment la vallée de la Vezère et les grottes de la Lozère, se soit étendu en Bretagne, en face des iles Œstréménides des auteurs anciens, habitées, disent-ils, par une population petite et brune. La situation de la Bretagne, dans un bout de terre (Finistère) en dehors des voies parcourues par les courants humains allant du nord, et du nord-est, vers la péninsule Ibérique par la passe de St. Sebastien. expliquerait la perpétuation de cette race dans ce pays, alors qu'en d'autres lieux elle a disparu noyée dans les masses.

S'il en est ainsi, si en laissant de côté la race de Spy et du Néanderthal, dont aucune trace n'est signalée en Bretagne, notre type B est celui de la race autocthone à l'époque néolithique, son étude à Carhaix, et dans les Montagnes Noires, et d'Arrhée, aurait un intérêt exceptionnel. Assurément on ne peut croire que, depuis des milliers d'années, il ne s'est pas modifié, ne serait-ce que par les milieux, et n'a pas été atteint par les croisements. Il est certain que le type actuel de l'Auvergnat n'est pas exactement celui des brachycéphales venus d'Asie. Aucun type ne s'immobilise dans le temps. Le type de Carhaix ne peut être rigoureusement celui des *long barrows* d'Angleterre. Mais tel qu'il est, son étude serait précieuse. Ce qu'il demande, ce sont des voyageurs s'installant sur les lieux, armés d'instruments, et déterminés à remplir nos feuilles d'observation; ce qu'il nous faut ce sont de séries de crânes Bretons du Centre.

J'ai terminé, et je me résume. J'ai constaté en Bretagne l'existence de quatre types. Deux sont des survivants de races historiques ou préhistoriques connues: un est le produit du mélange de ces deux races: un serait le descendant direct de la race autochthone de l'âge néolithique et, pour dire toute ma pensée, de l'âge paléolithique; je dis autochthone par opposition avec une race blonde qui se montrait déjà à l'état de conquérants ou de dominateurs dans les mêmes régions.

Si je ne m'abuse, une pareille conclusion mérite toute l'attention de l'Institut Anthropologique de la Grande Bretagne.

Agréez, etc.

DR. PAUL TOPINARD.

Physical Anthropology *of the* Isle of Man. By A. W. Moore, M.A., and John Beddoe, M.D., F.R.S.

The fortunate circumstance of a "Description Book" of the "Royal Manx Fencibles" having been preserved by Mr. Edward Gelling of Douglas, enables us to give what we hope will be considered a useful contribution towards the elucidation of the racial characteristics of the Manx people. As many of our readers may not be acquainted with the origin of the above-named corps, we will give a brief description of it: In the year 1779, Great Britain was so hard pressed by its enemies on all sides that it became desirable that the Isle of Man should contribute its mite to the general defence. A battalion of 333 men was therefore enrolled for the defence of the island only. It was disbanded in October, 1783, after the Peace of Versailles, but was re-embodied on February 20th, 1793. In 1795, a second battalion, containing about the same number of men, called the "Second Royal Manx Fencibles," was formed for service in Great Britain and Ireland. At the breaking out of the Irish Rebellion in 1798, these numbers were doubled and the regiment was sent to Ireland, where it was stationed at Coleraine, Omagh and other places in the north of that country. Nothing is known of what it did there. On the conclusion of the Peace of Amiens in 1802, both it and the first battalion, then called the "First Royal Manx Fencibles," were disbanded. On the renewal of the war in 1803, a single regiment of eight companies, containing about 800 men, was formed for service in Great Britain and Ireland. This regiment, also called the "Royal Manx Fencibles," appears to have been sometimes in England—for the most part in Scarborough—sometimes in Ireland, and sometimes in the Isle of Man, till it was disbanded in 1810. It is with it that our "Description Book" has to do.

This book, which contains the names of about 1,300 men who passed through the ranks between 1803 and 1810, has headings lettered "English," "Scotch," "Irish," "Foreigners," the Fencibles being all under the last designation. From this number of 1,300 we have subtracted all those under eighteen years of age (chiefly drummers), and those not born in the island, also all those whose names are either not Manx, or are not known in the island for a generation before 1800, even though they were born in the island. This leaves 1,112 names

which we have every reason to believe are those of men of native origin. The book containing them describes their complexion, eyes, hair, and stature, and it mentions the parish where each man was born and the trade he was brought up to. Unfortunately it does not give their chest measurement or their weight, so that we cannot tell whether the popular tradition, that the Manx Fencibles covered more ground than the same number of men in any other regiment in the British army, is correct or not. There is, however, quite enough information to show that they were a very fine body of men.

Let us briefly consider whether the results we propose to give from a comparison of the statistics indicated are likely to approximate closely to the true average physical characteristics of native Manxmen or not. To do this we will first examine in what proportion the various parishes have contributed to the total number, and what is likely to be the effect upon the average of these various proportions. A glance at Table A will show that the proportions vary from 1·49 per cent. of the total population in Lonan to 5·91 per cent. in Malew. The seven parishes which have the smallest proportion of Fencibles are Lonan, Rushen, Jurby, Maughold (with the town of Ramsey), Braddan (with the town of Douglas), Patrick, and German (with the town of Peel). As regards Lonan this small proportion is partly accounted for by the fact that a portion of the population consists of miners, none of whom served.

The Manx miners are for the most part tall, rather dark men, Dr. Beddoe, in 1886, giving their average height as 5 feet 10·3 inches,[1] and so some reduction in the average height of the Lonan men probably results from their exclusion. It is from the other parishes just mentioned that most of the fishermen come; and it is well known that the majority of Manx fishermen and sailors are tall, fair men. Their average height in 1886 is given as 5 feet 8·2 inches.[2] They were exempt from serving in the Fencibles, but hundreds of them joined the Royal Navy, both voluntarily and involuntarily. Another cause which would tend to decrease the average stature of the Fencibles is that the farmers, who are undoubtedly a tall class, 5 feet 11·3 inches[3] in 1886, were not recruited. On the other hand some men below

[1] "The Physical Anthropology of the Isle of Man, Manx Note Book," vol. iii. p. 33.

[2] "The Physical Anthropology of the Isle of Man, Manx Note Book," vol. iii. p. 33, *i.e.*, porters, 5 ft. 9 ins., fishermen, 5 ft. 8·4 ins. = 5 ft. 8·7 ins. and deduct for boots 0·5 ins. The porters are almost all of the same class as the fishermen.

[3] *Ibid.*; but both this and the height of the miners is undoubtedly higher than the true average.

5 feet 3 inches were certainly excluded.[1] But it is notorious that there are very few full grown men in the island below that height.[2] The considerations given above then tend to show that if it had not been for the exemptions mentioned, there would have been more tall men, and more blue and grey eyes with fair complexions, and, perhaps, even allowing for the exclusion of men under 5 feet 3 inches, a slightly higher average stature. That the 1,112 names given mostly belong to men of native origin there can be but little doubt, and on the whole we are inclined to think they give averages which very closely represent the physical characteristics of Manxmen at the present day, if we bear in mind some inherent defects in the method of obtaining the colour of the hair, and, to a less extent of obtaining the colour of the eyes, which we will now point out. As regards hair, it would appear that the observer (or observers) was apt to call people dark-haired, where most English observers would have used the term "brown" simply, and most Frenchmen would have said "châtain": also that the recruiting observers called shades "black" which most English people would have called dark or dark brown, and most Frenchmen "brun" or "brun foncé." Similarly, it seems probable that they applied the word brown to some shades, which most of us would have called light or fair. In short, their *personal equation* leaned too much to the dark side.

In the eyes, it seems probable that they gave a very limited meaning to the term "blue," and assigned all the greyish shades of blue to "grey." Blue, however, is probably really less common than grey. It seems probable also that a larger proportion of "grey" eyes should be classed with "light" than, from the particulars given, we have been able to do. Hazel eyes have been classed as "dark," though there is a considerable number of them, and perhaps some may really have been of a neutral hazel grey.[4] On the whole, then, the results as regards hair and eyes taken between 1803 and 1810, which for convenience

[1] Among the regulations with reference to enlisting recruits for the Royal Manx Fencibles are the following:

(1) No man to be enlisted who is above 30 years of age or less than 5 ft 5 ins. high, except that growing lads from 17 to 19 may be taken at 5 ft. 4 in.

(2) The greatest care to be taken that no man be enlisted who is not stout and well made, *i.e.*, perfectly well limbed, open chested, and what is called long in the fork.

[2] Only three out of 200 were under 5 ft. 4 ins., in 1886; see "Manx Note Book," vol. iii. p. 32.

[4] Hazel is a term frequently as, I think, misapplied. It is properly the colour of the shell of the hazel-nut, the true nut-brown, but some people, as, for example, Mr Francis Galton, apply it to the eyes which I call hazel grey, in which only the inner radiating fibres are hazel or orange, and the outer part of the iris grey or bluish.

we may call those of 1806, cannot be regarded as nearly so accurate as those gotten by Dr. Beddoe in 1886, notwithstanding the fact that the material in the former case is not only more copious, but doubtless of more purely native composition. The chances of error are, however, to a considerable extent reduced by our method of grouping the results under a very small number of heads.[1] As regards stature, however, the case is quite different, and it is clear that the results of 1806 are more reliable than those of 1886. Thus a glance at Table B which gives the numbers and percentages at the various heights, will show that in 1886 the percentages of stature at 5 feet 6 inches, 5 feet 7 inches, and 5 feet 8 inches, between which heights the majority of Manxmen undoubtedly are, total only 6·0, 15·0, and 15·0; while in 1806 they are 18·4, 20·0, and 16·9. It is clear, too, that the various observers employed in 1886 exerted themselves to pick out tall men, notwithstanding their instructions. This has resulted in an average stature of 5 feet 8·50 inches[2] as compared with 5 feet 7·52 inches in 1806, the latter being very near the true average. Taking then Dr. Beddoe's results as regards eyes,[3] and those of 1806 as regards both eyes and stature,[4] we have probably very reliable means to compare with statistics as to eyes and stature in the rest of the United Kingdom.

[1] The various terms used in the "Description Book" for complexion are "brown," "dark," "fair," "swarthy," "fresh," "sallow," and "pale." These we have grouped together for purposes of comparison under "dark" and "fair;" "brown," "dark," "swarthy," and "sallow" being placed under the former, and "fair," "fresh," and "pale" under the latter. Eyes are designated as "blue," "grey," "dark," "hazel," "black," "brown," and "light," and have been grouped under "light," "neutral," and "dark." The grey eyes are divided between light and neutral by placing those with fair, fresh, or pale complexions under "light;" and those with dark complexions and medium or dark hair under "neutral." Under "light" are also placed blue and light eyes. Under "dark" are brown, dark, hazel, and black eyes. Hair is variously noted as "brown," "dark," "black," "sandy," "red," "light," and "fair," which we have placed under "light," containing sandy, red, light, and fair; "medium," *i.e.*, brown, and "dark," *i.e.*, black and dark. It should be borne in mind that pale complexions are occasionally united with dark hair and eyes, and that light grey and blue eyes sometimes go with dark complexion and hair. In Appendix C will be found the full particulars about complexion, hair, and eyes as summarised from the "Designation Book."

[2] 5 ft. 9·07 ins. gross, but 0·57 may be deducted for shoes, as about half only of the 200 were measured in their "stocking feet," whereas this was invariably the case with the Fencibles.

[3] From "Manx Note Book," vol. iii

[4] See Tables C, D, and E.

Eyes.

	Light.*	Dark.
	per cent.	per cent.
Isle of Man, 1886	76·6	23·4
,, 1806	76·2	23·8
†Ireland. Indigenous names	74·2	25·8
† ,, Exotic names	73·4	26·5
†Scotland	68·2	31·8
†England (north)	68·0	32·0
† ,, (generally)	62·4	37·6
† ,, (Cornwall)	55·6	44·4
†Wales	55·4	44·6

* *I.e.*, Light + Neutral. Topinard's method (see p. 17) gives, for 1806, eyes, light, 69·8; dark, 30·2. Hair, fair, 20·2; dark, 79·8. Index of Nigrescence (Beddoe), 60·2.

† These are taken from the lists of deserters in the Police Gazette for a considerable number of years. In them, blue + grey + light = light; and hazel + brown + dark + black = dark.

It will thus be seen that the Isle of Man heads the list with the largest percentage of light eyes, the native Irish, to which race the Manx are probably more nearly allied than any other, coming next.

The average height of the Manx Fencibles was 5 feet 7·52 inches, the culminating point of the curve of stature being apparently 5 feet 7 inches,[1] but it would doubtless have been a little higher had the measurements been given in fractions of inches. In fact all roads lead to the one conclusion that the true average and mean stature of the Fencibles was quite 5 feet $7\frac{1}{2}$ inches, or 1,714 millimetres. The figures do not lead one to think that many islanders could have been rejected for want of height, and, on the other hand, many of the Fencibles were growing lads of 18 or 19, and certainly could not have nearly reached their full stature.

Let us compare the results, as regards eyes and hair, in the Isle of Man, of 1806 with 1886, bearing in mind the cautions given with reference to the former.

Eyes.

	Light.	Neutral.	Dark.
	per cent	per cent.	per cent.
1806	54·8	21·4	23·8
1886	59·6	17·0	23·4

The agreement in the percentage of dark eyes is remarkable;

[1] See Table B.

Hair.

	Light.	Medium.	Dark
	per cent.	per cent.	per cent.
1806	15·0	25·6	59·4
1886	23·9	35·0	41·1

and in more detail.

	Red.	Fair.	Medium.	Dark.	Black.
	per cent.	per cent.	per cent.	per cent	per cent.
*1806	3·0	12·0	25·6	43·5	15·9
1886	5·2	18·7	35·0	36·0	5·1

* For percentages of hair in different districts and in each parish, see Tables D and E.

Here the discrepancies are much greater and have probably arisen from the causes already mentioned. The question of complexion (see Table C) is also dealt with in 1806; and it shows that the percentage of fair to dark complexions is as 64·6 to 35·4.

We now approach the main object of our paper, *i.e.*, to consider whether the statistics before us throw any fresh light on the various races or race-types which have inhabited the Isle of Man, and how they have been distributed in various portions of it. With reference to the first point, as we have no craniological measurements, we can only say that the rareness of red hair,[1] which is even more marked than in 1886, and the common occurrence of fair and light brown hair,[2] show the prevalence in man of the Scandio-Gaelic characteristics described by Dr. Beddoe,[3] and the comparatively tall stature of the Manx indicates the presence of the same cross. But, as regards the second point, the distribution of Norsemen and Gaels in the various parts of the island, our figures are distinctly useful in, as will be seen, confirming and amplifying previous conclusions.[4]

On this point of distribution Dr. Beddoe remarks, "Whether there be any decided difference between the southern and the

[1] See above.

[2] See Tables D and E.

[3] "Manx Note Book," vol iii, pp. 26–7.

[4] The inaccuracy of the particulars as to complexion, etc., though it renders the comparison of man in these respects with other countries uncertain, does not necessarily do so when one district in the island is compared with another. The types we call Gaelic are those most commonly found in districts where the Gaelic tongue is still, or is known to have been, spoken.

northern men, taken *en masse*, I am not prepared to say";[1] and, as "the distribution of Celtic and Scandinavian place-names is remarkably regular throughout the island,[2] there is no special indication to be derived from them." Let us see if we can add to this information. To do so we will compare the percentages of light, neutral, and dark eyes, of fair, medium, and dark hair, and of fair and dark complexion;[3] and, in addition to this, we will compare the same figures on Topinard's plan, adopted by him in his papers on the colours of eyes and hair in France, *i.e.*, by excluding neutral eyes[4] and medium hair,[5] and calculating the percentages of light and dark in the residue: calling one method O and the other T for the sake of distinction: and, further, to make the results more complete and searching, we will compare them not only in a variety of districts, but in every parish in the island. This done we will give the various statures in the same way. Let us first divide the island into the usually accepted districts of north and south.[6]

In making a comparison between these two, we must remember that the southern district contained a larger proportionate town population,[7] which would possibly tend to make the average of its inhabitants shorter and darker.[8] We have then:—

	O.	Light.	Neutral.	Dark.		Fair.	Medium.	Dark.
		per cent.	per cent	per cent.		per cent.	per cent.	per cent.
N.	Eyes	56·8	21·4	21·8	Hair .	12·2	25·7	62·1
S.	,,	*53·9*	*21·5*	*24·6*	,, ..	*16·4*	*25·6*	*58·0*
	T.							
N.	,,	*72·2*	—	27·8	,, ..	16·4	—	83·6
S.	,,	*68·5*	—	*31·5*	,, ..	*22·0*	—	*78·0*

Complexion. N. Fair, 68·1 per cent.; S, 62·9 per cent.; Dark, N., 31·9 per cent.; S., 37·1 per cent.

[1] "Manx Note Book," vol. iii, p. 28.

[2] "Manx Names" (A. W. Moore), p. 11.

[3] For the statistics on which these comparisons are founded see Tables D, E, and F. These tables will also afford material for many other combinations besides those which we have given.

[4] Dark shades of grey, green, light hazel grey, and generally, all colours which, on cursory inspection, leave one in doubt whether to call them light or dark.

[5] Various shades of chestnut or medium brown.

[6] North = the sheadings of Ayre, Michael, and Garff, containing the parishes of Bride, Jurby, Andreas, Ballaugh, Michael, Lezayre, Maughold (with the town of Ramsey), and Lonan. South = the sheadings of Glenfaba, Middle, and Rushen, containing the parishes of German (with the town of Peel), Patrick, Marown, Onchan, Braddan (with the town of Douglas), Santon, Malew (with the town of Castletown), Arbory, and Rushen.

[7] About 8,100 to 21,784, as compared with about 1,300 to 12,207.

[8] Here the elimination of the fishermen makes no difference, as their numbers are about proportionate to the comparative numbers given in each district.

These figures show that the southern eyes are darker than the northern, but that the northern hair is darker than the southern, the index of nigrescence[1] being 65·8 in the former and 57·4 in the latter.

We will now take a three-fold division into north, central and south[2]:—

O.	Light.	Neutral.	Dark.		Fair.	Medium	Dark.
	per cent.	per cent.	per cent.		per cent.	per cent	per cent.
N. Eyes ..	56·4	21·2	22·4	Hair ..	12·2	27·5	60·3
C. „ ..	52·2	21·8	26·0	„ ..	18·5	21·0	60·5
S. „ ..	*55·7*	*21·2*	*23·1*	„ ..	*14·2*	*28·2*	*57·6*
T.							
N. Eyes ..	71·7	—	28·3	„ ..	19·7	—	80·3
C. „ ..	66·8	—	33·2	„ ..	23·1	—	76·9
S. „ ..	*70·6*	—	*29·4*	„ ..	*19·8*	—	*80·2*

Complexion. N. Fair, 68·4 per cent.; Dark, 31·6 per cent. C. Fair, 63·3 per cent.; Dark, 36·7 per cent. S. Fair, 62·9 per cent.; Dark, 37·1 per cent.

Here again the differences are small as regards eyes, the central district having the largest percentage of dark ones, but as in the central district the proportion of grey eyes with light complexion is much greater than that of grey eyes with dark complexion, the index of nigrescence is only 54·4 in this district as compared with 64·6 in the northern and 61·9 in the southern.

Another line of cleavage may be taken between the eastern and western districts, though it is by no means as distinct a division as that between north and south, as two parishes, Bride and Rushen, have both an east and west coast, though the east coast is much longer than the west in Bride and the west than the east in Rushen, and neither Andreas nor Arbory belong very distinctly to the districts in which they are placed, while Marown in the centre, the only parish not touching the sea, belongs to neither.[3] We will, therefore, first take Marown with the eastern parishes and then with the western:—

[1] Results from Table E by adding dark hair to black doubled, and deducting from this the red and fair hair added, *i.e.* (dark + 2 black) − (red + fair).

[2] The north contains the same parishes as before, except Lonan, which is included in the central district, together with Braddan, Onchan, Marown, and German, and the towns of Douglas and Peel; the remaining parishes, with the town of Castletown, constituting the southern district. Proportions of town to country population: N. circa 1,500 to 10,580, C.; circa 6,300 to 13,276. S. circa 1,800 to 10,135.

[3] E.: Bride, Lezayre, Maughold (and Ramsey), Lonan, Onchan, Braddan (and Douglas), Santon, Malew (and Castletown), Arbory. W.: Patrick, Rushen, German (and Peel), Michael, Ballaugh, Jurby, Andreas.

O	Light	Neutral.	Dark.		Fair.	Neutral.	Dark.
	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.
E.* Eyes	53·9	21·3	24·8	Hair ..	14·2	25·8	60·0
W. ,,	57·0	21·4	21·6	,, ..	16·6	25·3	58·1

* With Marown.

T.	Light.	Dark.		Fair.	Dark.
	per cent.	per cent.		per cent.	per cent.
E.* Eyes ..	68·5	31·5	Hair ..	19·2	80·8
W. ,, ..	*71·9*	*28·1*	,, ..	*22·1*	*77·9*

Complexion. E. Fair, 64·4 per cent.; Dark, 35·6 per cent. W. Fair, 64·9 per cent.; Dark, 35·1 per cent. Index of Nigrescence: E. 61·7; W. 57·1 per cent.

* With Marown.

O.	Light.	Neutral.	Dark.		Fair.	Neutral.	Dark.
	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.
E.* Eyes..	53·9	21·4	24·7	Hair ..	13·2	26·7	60·1
W. ,, ..	*56·3*	*21·6*	*22·1*	,, ..	*18·3*	*23·8*	*57·9*
T.							
E.* Eyes..	68·6	—	31·4	,, ..	18·1	—	81·9
W. ,, ..	*71·8*	—	*28·2*	,, ..	*23·9*	—	*76·1*

Complexion. E. Fair, 64·5 per cent ; Dark, 35·5 per cent. W. Fair, 64·7 per cent ; Dark, 35·3 per cent. Index of Nigrescence: E., 62·4; W., 55·8.

* Without Marown.

It will be seen that the transference of the parish of Marown from one district to the other makes very little change, except that the excess of the nigrescence in the east over the west is increased when the parish of Marown is transferred to the latter, and that the proportion of dark eyes and complexion is slightly greater in the former than in the latter in both cases.

We now proceed to compare smaller districts, in which, it will be seen, the differences are rather more accentuated:—

O.	Light.	Neutral.	Dark.		Fair.	Neutral.	Dark.
	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.
N.E.* Eyes	57·5	18·6	23·9	Hair ..	10·8	25·1	64·1
N.W.† „	53·3	23·8	20·9	„ ..	13·7	29·7	56·6
T.							
N.E.* „	70·6	—	29·4	„ ..	14·4	—	85·6
N.W.† „	72·7	—	27·3	„ ..	19·5	—	80·5

Complexion. N.E., Fair, 70·0 per cent.; Dark, 30·0 per cent. N.W., Fair, 67·7 per cent.; Dark, 33·3 per cent.
Index of Nigrescence: N.E., 66·5. N.W., 58·5.

* Parishes of Bride, Lezayre, Maughold (and Ramsey).
† Parishes of Andreas, Jurby, Ballaugh, Michael.

There is no great distinction, the eyes and hair of the north-east are darker than the north-west, and the complexion of the north-west is darker than that of the north-east.

O.	Light.	Neutral	Dark.		Fair.	Neutral.	Dark.
	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.
E.C.* Eyes	54·5	19 3	26·2	Hair ..	15·9	22·3	61·8
W.C.† „	48·1	26·4	25·5	„ ..	23·3	18 6	58 1
T.							
E.C.* „	67·6	—	32 4	„ ..	20·5	—	79·5
W.C.† „	65·3	—	34 7	„ ..	28·6	—	71·4

Complexion: E C., Fair, 66·9 per cent.; Dark, 33·1 per cent. W.C., Fair, 55 8 per cent.; Dark, 44·2 per cent.
Index of Nigrescence: E.C., 58·0; W.C., 46·2.

* Parishes of Lonan, Onchan and Braddan (with Douglas).
† Marown and German (with Peel).

As regards eyes there is very little difference, but, though the much greater proportion of light hair in the west-central is shown by the index of nigrescence, it has an equally greater proportion of dark complexions, the complexion seeming to vary with the eyes rather than with the hair.

O.	Light.	Neutral.	Dark.		Fair.	Neutral.	Dark.
	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.
S.E.‡ Eyes	51·6	24·2	24·2	Hair ..	12·6	30·8	56·6
S.W.§ „	69·0	11·4	19·6	„ ..	19·6	19·6	60·8
T.							
S.E.‡ „	68·0	—	32·0	„ ..	18·2	—	81·8
S.W.§ „	77·9	—	22·1	„ ..	24·4	—	75·6

Complexion: S.E., Fair, 59·7 per cent.; Dark, 40·3 per cent. S.W., Fair, 73·2 per cent.; Dark, 26·8 per cent.
Index of Nigrescence: S.E., 64·1. S.W., 53·7.

‡ Parishes of Santon, Malew (with Castletown) and Arbory.
§ Patrick, Rushen.

Here the south-western district comes out fairer than the south-eastern by every test.

O.		Light.	Neutral.	Dark.		Fair.	Neutral.	Dark.
		p.c.	p.c.	p.c.		p.c.	p.c.	p.c.
Jurby, Ballaugh, Michael	Eyes ..	60·4	24·0	15·6	Hair ..	20·3	25·0	54·2
Maughold and Lonan	„ ..	*60·2*	*22·6*	*17·2*	„ ..	*9·6*	*12·9*	*77·5*
T.								
Jurby, Ballaugh, Michael	„ ..	79·5	—	20·5	„ ..	26·7	—	73·3
Maughold and Lonan	„ ..	77·8	—	22·2	„ ..	10·6	—	89·4

Complexion. (J., B and M.). Fair, 67·7 per cent.: Dark, 32·3 per cent. (M. and L.). Fair, 66·7 per cent.; Dark, 33·3 per cent.
Index of Nigrescence: Jurby, etc., 54·7. Maughold and Lonan, 79·4.

Here there is a very slight difference between the eyes and complexion and a considerable difference in the hair of the two districts, the latter having much the largest index of nigrescence (79·4) of any district.

It is not, however, till the results from the different districts are placed together that we can fully appreciate their significance. We will therefore give the proportions of dark eyes and

hair under Topinard's system, ignoring the complexion results as they are rather vague and unsatisfactory[1] :—

		Dark Eyes.	Dark Hair.	Index of Nigrescence.
		per cent.	per cent.	
N.	1	27·8 (13)	83·6 (3)	67.2 (2)
S.		*31·5* (5)	*78·0* (11)	57·4 (11)
N.	2	28·3 (9)	80·3 (8)	64·6 (4)
C.		33·2 (2)	76·9 (13)	54·4 (15)
S.		*29·4* (8)	*80·2* (9)	61·9 (7)
E (*a*)	3	31·5 (5)	80·8 (6)	61·9 (8)
W.		28·1 (12)	77·9 (12)	57·1 (12)
E. (*b*)		31·4 (7)	81·9 (4)	64·4 (5)
W.		*28·2* (10)	*76·1* (14)	55·8 (13)
N.E.	4	28·2 (10)	86·0 (2)	66·5 (3)
N.W.		*27·3* (14)	80·5 (7)	58·5 (9)
E.C.	5	32·4 (3)	79·5 (10)	58·0 (10)
W.C.		*34·7* (1)	*71·4* (17)	46·2 (17)
S.E.	6	32·0 (4)	81·8 (5)	64·1 (6)
S.W.		22·1 (16)	75·6 (15)	53·7 (16)
Jurby, Ballaugh and Michael	7	20·5 (17)	73·3 (16)	54·7 (14)
Maughold and Lonan		22·2 (15)	89·4 (1)	79·4 (1)

a. As with Marown. *b*. Without Marown.

Before commenting on these figures, we must again remind our readers that we are satisfied from internal evidence, and from comparison with Dr. Beddoe's tables, that our observers, though their standard for eyes was fairly correct, saw the shades of hair as through a darkening glass, wherefore the index of nigrescence invariably comes out too high. The first remarkable feature is that the variations of eyes and hair rarely correspond. This is especially so in the Peel district (No. 5, W.C.) which has the greatest proportion of dark eyes and the smallest of dark hair, and the Castletown (No. 6, S.E.) and Douglas districts (No. 5, E.C.) are not far behind it in these respects. Such a proportion indicates an admixture of alien blood, though probably at some remote epoch. In the district containing the remaining town, Ramsey (No. 4, N.E.), the exact converse is the case: the same remark applies to the whole northern division, and, even more markedly so, to the parishes of Maughold[2] and Lonan.[3] Both these parishes are very rough[4] and naturally poor districts, and it is likely enough that they contain a larger proportion of

[1] The dark complexions seems to be most prevalent in the parishes of Malew and German, which contain the two *ancient* towns of Castletown and Peel.

[2] Northern. [3] Central.

[4] They belong to the sheading of Garff, "the rough country."

Gaels than the other parishes. Anyhow, it is in them that the maximum of dark hair and all but the maximum of light eyes is found, and that the index of nigrescence is highest, this being just what might be expected in a largely Gaelic population. The coast of Cumberland, lying opposite and within sight, may have held out greater attractions to Norwegian settlers in these parishes, so that, while the greater number of their arrivals were probably on the west coast of the island, as the sandy shores of the north-western district would facilitate the hauling up their ships, the greater number of their departures may have been from the east coast.

This supposition is strikingly confirmed by our results, especially when those given by the north-western parishes of Jurby, Ballaugh, and Michael, are compared with eastern parishes of Maughold and Lonan (No. 7), the former having the smallest proportion of dark eyes and nearly the smallest of dark hair, and the latter nearly the smallest of dark eyes, and quite the largest of dark hair. The comparison of the north-eastern coast with the north-western[1] and of the south-eastern with the south-western gives less decided results, but it will be seen that in the south-western district the proportion of dark eyes is very small, and that of dark hair is not large.

Let us now see how the results from stature confirm those from colour.

The average height of the northern district is 5 feet 7·66 inches, of the southern, 5 feet 7·45 inches. Then, dividing the island into three districts as before, the northern is 5 feet 7·71 inches, the central, 5 feet 7·31 inches, and the southern, 5 feet 7·55 inches: the eastern[2] 5 feet 7·47 inches, and the western, 5 feet 7·66 inches, the eastern[3] 5 feet 7·40 inches, and the western, 5 feet 7·50 inches: the east-central, 5 feet 7·34 inches, the west-central, 5 feet 7·26 inches: the north-western, 5 feet 7·85 inches, the south-eastern, 5 feet 7·57 inches: the south-western, 5 feet 7·53 inches: Jurby, Ballaugh and Michael, 5 feet 8·02 inches; Maughold and Lonan, 5 feet 7·34 inches. Here we find the fair-haired men of Jurby, Ballaugh and Michael taking the lead in height, closely followed by the same parishes, with the adjacent parish of Andreas, then by the northern and western districts, while the shortest men are found in the east and west central districts, where there is an admixture of alien people in the towns, and in the most purely Gaelic district, *i.e.*, the parishes of Maughold and Lonan. Thus the

[1] Parishes of Jurby, Andreas, Ballaugh, Michael.
[2] Eastern with Marown and western without.
[3] Eastern without Marown and western with.

taller men are found in the districts which, from the colour of eyes and hair, we have decided to contain the largest proportion of men of Scandinavian descent and the shorter in those which we have decided, in the same way, to be more purely Gaelic. This is just what might have been expected.

An interesting part of the "Description Book" is that which gives the various occupations of the Fencibles. The large proportion of them employed in some trade or handicraft, viz., 403 out of 1,112, there being 709 labourers, is remarkable.

The average height of the labourers, 5 feet 7·61 inches, is identical with their height as given by Dr. Beddoe in 1886.[1] The labourers of the north average 5 feet 7·81 inches, of the centre, 5 feet 7·38 inches and of the south, 5 feet 7·64 inches. The tallest workers are the joiners, averaging 5 feet 7·72 inches, and the shortest, the barbers, 5 feet 7·18 inches, the general average stature of the workers, other than labourers, being 5 feet 7·37 inches.[2]

We are now in a position to summarise the results we have arrived at, and can state that, generally speaking, they distinctly confirm Dr. Beddoe's conclusions that the population of the Isle of Man is Scandio-Gaelic, and that there is no very great difference in the proportionate distribution of Norsemen and Gaels in the north and south. Our results, however, enable us to state further that there appears to be a decided preponderance of Norsemen in the parishes of Jurby, Ballaugh, and Michael, and of Gaels in the parishes of Maughold and Lonan, while there are distinct traces of alien elements in the districts of Douglas, Castletown and Peel, especially in the latter, where the large proportion of dark eyes and fair hair is very remarkable.

In Tables D and E will be found the numbers and percentages of the various complexions, eyes and hair in each parish, and in Table F the stature. They are interesting in themselves, but, excepting in the parishes of Braddan and Malew, the numbers are too small to allow of any conclusive judgment being formed upon them. And yet the results as regards both colour and stature approximate closely to what any one knowing the island well would expect. The Jurby people are certainly the fairest in the island, though there is not so much difference between them and the inhabitants of the other parishes, especially those of Bride, as our figures would indicate. As regards stature popular opinion has it that the men of Jurby and Patrick are the tallest, and that Ballaugh, Michael, German, and Rushen follow in the order given, and, bearing in mind that the parishes

[1] See "Manx Note Book," vol. iii. p. 33.
[2] See Table 2.

of Patrick, German, and Rushen lose in stature from the elimination of the fishermen, this also agrees closely with our figures.

APPENDIX.

TABLE A.—*Proportion of population of each parish serving in the "Fencibles."*

Parish.		Population.*	Fencibles.	Per cent
Bride	(8)	840	26	3·10
Jurby	(15)	910	23	2·53
Andreas	(4)	1,892	72	3·80
Ballaugh	(7)	1,236	39	3·24
Michael	(9)	1,215	34	3·00
Lezayre	(5)	1,965	74	3·76
Maughold and Ramsey	(14)	2,522	67	2·65
		10,580	335	3·15
Northern Parishes—				
Lonan	(17)	1,627	26	1·49
Onchan	(9)	1,070	32	3·00
Braddan and Douglas	(13)	6,426	175	2·72
Marown	(6)	1,021	38	3·71
German and Peel	(11)	3,132	91	2·91
		13,276	362	2·77
Central Parishes—				
Patrick	(12)	2,092	58	2·78
Santon	(2)	656	31	4·72
Malew and Castletown	(1)	4,000	237	5·91
Arbory	(3)	1,299	50	3·85
Rushen	(16)	2,079	39	1·87
		10,135	415	3·83
Islands		33 091	1,112	3·25

* Censuses were taken in 1792 and 1811, the above figures being a mean between the two.

TABLE B.—*Percentage at each height between* 5 *ft. and* 6 *ft.* 11 *in.*

	1806.	1886.
ft. in.		
5 0	—	1·5
2	—	—
3	—	—
4	3·9	1·5
5	9·1	4·0
6	18·4	6·0
7	20·0	15·0
8	16·9	15·0
9	13·5	18·0
10	9·0	13·5
11	4·8	10·0
6 0	1·4	9·0
1	1·1	2·5
2	0·3	2·5
3	0·1	—
4	—	0·5
5	0·1	0·5
11	—	0·5
	—	—
	100	100

TABLE B—(detailed.)

STATURE OF NATIVE MANXMEN.

NUMBERS MEASURED AT SEVERAL HEIGHTS.

Height.	Braddan.	Malew.	Santon.	Arbory.	Rushen.	Southern Parishes Total.	Grand Total.
ft. in.							1
6 5							1
4						1	1
3						2	3
2						10	13
1	1	6		1	1	5	16
0		3				13	52
5 11	1	6	1	1	3	13	160
10		25		6	1	38	150
9		29	1	12	2	55	187
8		17	4	2	6	80	223
7		51	6	7	10	83	205
6		44	7	10	7	74	101
5		21	4	3	4	36	44
4		5	3	1	3	14	16
3					1	4	
	362	237	58	50	39	415	1112

TABLE C.—*Eyes.*

	Light.	Neutral.	Dark.			
	Light.	Blue.	Grey.	Hazel.	Brown	Dark	Black.
Bride	—	2	13	8	—	3	—
Jurby	—	2	15	6	—	—	—
Andreas	—	2	50	13	—	5	2
Ballaugh	2	3	29	4	1	—	—
Michael	—	5	25	2	—	2	—
Lezayre	—	4	53	9	—	6	2
Maughold and Ramsey ..	1	6	48	5	—	5	2
Northern Parishes..	3	24	233	47	1	21	6
Lonan	—	2	20	2	—	2	—
Onchan	—	4	17	3	—	5	3
Braddan and Douglas ..	2	5	122	14	4	19	9
Marown	—	2	26	6	—	4	—
German and Peel ..	3	4	61	2	2	14	5
Central Parishes ..	5	17	246	27	6	44	17
Patrick	2	8	37	3	—	8	—
Santon	—	8	16	1	—	5	1
Malew and Castletown ..	2	28	149	17	7	30	4
Arbory	2	6	30	7	—	5	—
Rushen	—	6	25	2	—	1	5
Southern Parishes..	6	56	257	30	7	49	10
Island .. .	14	97	736	104	14	114	33

Table C.—*Hair.*

	Light.				Medium	Dark.	
	Sandy	Red.	Light.	Fair.	Brown.	Dark.	Black.
Bride	—	—	5	—	4	13	4
Jurby	—	—	3	3	10	6	1
Andreas	1	—	2	—	26	30	13
Ballaugh	—	—	8	4	4	11	12
Michael	1	1	—	—	10	14	8
Lezayre	1	—	5	1	27	31	9
Maughold and Ramsey	—	1	1	4	11	41	9
Northern Parishes..	3	2	24	12	92	146	56
Lonan	—	—	2	1	1	20	2
Onchan	—	1	3	2	8	14	4
Braddan and Douglas	—	3	21	4	43	82	22
Marown	—	—	9	—	6	22	1
German and Peel ..	6	3	9	3	18	36	16
Central Parishes ..	6	7	44	10	76	174	45
Patrick	2	—	1	8	10	31	6
Santon	—	—	1	—	11	18	1
Malew and Castletown	5	7	13	7	74	78	53
Arbory	—	—	1	6	13	20	10
Rushen	—	2	4	2	9	16	6
Southern Parishes..	7	9	20	23	117	163	76
Island	16	18	88	45	285	483	177

Complexion.

	Fair.			Dark.			
	Fair.	Fresh.	Pale.	Sallow.	Brown.	Dark	Swarthy.
Bride	3	15	2	—	1	3	2
Jurby	5	14	2	1	—	1	—
Andreas	20	24	3	4	—	18	3
Ballaugh	14	11	1	1	—	9	3
Michael	6	11	1	—	1	13	2
Lezayre	23	26	3	1	3	13	5
Maughold and Ramsey ..	14	27	4	3	3	16	—
Northern Parishes..	85	128	16	10	8	73	15
Lonan	3	13	1	—	—	6	3
Onchan	7	13	1	5	—	3	3
Braddan and Douglas ..	66	48	4	1	6	45	5
Marown	10	13	1	2	—	9	3
German and Peel ..	30	16	2	—	2	36	5
Central Parishes ..	116	103	9	8	8	99	19
Patrick	20	14	2	1	—	8	4
Santon	12	10	1	—	5	3	—
Malew and Castletown ..	47	79	6	2	9	49	45
Arbory	8	26	1	1	—	8	6
Rushen	11	15	—	1	2	6	4
Southern Parishes..	107	144	10	5	16	74	59
Island	308	375	35	23	32	246	93

Table D.—*Eyes.*

Parish.		Total Number.	Light.		Neutral.		Dark.	
			No	Per cent.	No.	Per cent.	No.	Per cent.
Bride	E	26	10	38·5	5	18·4	11	43·1
Jurby	W.	23	15	65·2	2	8 7	6	26·1
Andreas	W	72	35	48·6	17	23 6	20	27 8
Ballaugh	W.	39	25	64·1	9	33·1	5	12 8
Michael	W.	34	18	52·9	12	35·3	4	11·8
Lezayre	E.	74	46	62·2	11	14 9	17	22 9
Maughold and Ramsey	E	67	40	60·0	15	22·5	12	17·5
Lonan	E	26	16	61·5	6	23 1	4	15·4
Onchan	E.	32	16	50·0	5	15 6	11	34·4
Braddan and Douglas	E.	175	95	54 3	34	19·4	46	26·3
Marown	C.	38	19	50 0	9	23·7	10	26·3
German and Peel ..	W.	91	43	47·3	25	27·5	23	25·3
Patrick	W.	58	42	72·4	5	8·6	11	19·0
Santon	E	31	20	64 5	4	12 9	7	22 6
Malew and Castletown	E.	237	113	47·7	66	27·9	58	24·4
Arbory	E.	50	31	62 0	7	14·0	12	24·0
Rushen	W.	39	25	64·1	6	15·4	8	20·5

Hair.

Parish.		Fair.		Medium.		Dark.	
		No	Per cent.	No.	Per cent.	No.	Per cent.
Bride	E	5	19·2	4	15 4	17	65·4
Jurby	W.	6	26·1	10	43·5	7	30·4
Andreas	W.	3	4·2	26	36 1	43	59·7
Ballaugh	W.	12	30·8	4	10·2	23	59·0
Michael	W.	2	5·7	10	29·6	22	64·7
Lezayre	E	7	9·4	27	36·5	40	54·1
Maughold and Ramsey	E	6	9·0	11	16 4	50	74·6
Lonan	E.	3	11·5	1	3·9	22	84·6
Onchan	E.	6	18·7	8	25·0	18	56·3
Braddan and Douglas	E.	28	16 0	43	24·6	104	59·4
Marown	C.	9	23·7	6	15·8	23	60·5
German and Peel ..	W.	21	23·1	18	19·8	52	57·1
Patrick	W.	11	19 0	10	17 2	37	63·8
Santon	E.	1	3·2	11	35·5	19	61·3
Malew and Castletown	E	32	13·5	74	31·2	131	55·3
Arbory	E.	7	14·0	13	26·0	30	60·0
Rushen	W.	8	20·5	9	23 1	22	56·4

Complexion.

Parish.	Fair.		Dark.	
	No.	Per cent.	No.	Per cent.
Bride .. .. .. E.	20	76·9	6	23·1
Jurby .. .. .. W.	21	91·3	2	8·7
Andreas .. .. W.	47	65·4	25	34·7
Ballaugh .. .. W.	26	66·7	13	33·3
Michael .. .. W.	18	52·9	16	47·1
Lezayre .. .. E.	52	70·3	22	29·7
Maughold and Ramsey E	45	67·2	22	32·8
Lonan .. .. E.	17	65·4	9	34·6
Onchan .. .. E.	21	65·6	11	34·4
Braddan and Douglas E.	118	67·4	57	32·6
Marown .. .. C.	24	63·2	14	36·8
German and Peel .. W.	48	52·7	43	47·3
Patrick .. .. W.	45	77·6	13	22·4
Santon .. .. E.	23	74·2	8	25·8
Malew and Castletown E.	132	55·7	105	44·3
Arbory .. .. E	35	70·0	15	30·0
Rushen .. .. W.	26	66·7	13	33·3

TABLE D.—*Eyes and Hair.* (*Topinard's Method.*)

Parish.	Eyes.				Hair.			
	No.		Per cent.		No.		Per cent.	
	Light.	Dark.	Light.	Dark.	Fair.	Dark.	Fair.	Dark.
Bride	10	11	47·6	52·4	5	17	22·7	77·3
Jurby	15	6	71·4	28·6	6	7	46·2	53·8
Andreas	35	20	63·6	36·4	3	43	6·5	93·5
Ballaugh	25	5	83·5	16·7	12	23	34·3	65·7
Michael	18	4	81·8	18·2	2	22	8·4	91·6
Lezayre	46	17	73·0	27·0	7	40	14·9	85·1
Maughold and Ramsey ..	49	12	77·0	33·0	6	50	10·7	89·3
Lonan	16	4	80·0	20·0	3	22	12·0	88·0
Onchan	16	11	59·3	40·7	6	18	25·0	75·0
Braddan and Douglas ..	95	46	67·4	32·6	28	104	21·2	78·8
Marown	19	10	65·5	34·5	9	23	28·1	71·9
German	43	23	65·2	34·8	21	52	28·8	71·2
Patrick	42	11	79·2	20·8	11	37	22·9	77·1
Santon	20	7	74·1	25·9	1	19	5·0	95·0
Malew	113	58	66·1	33·9	32	131	19·6	80·4
Arbory	31	12	72·1	27·9	7	30	18·9	81·1
Rushen	25	8	75·8	24·2	8	22	26·7	73·3

Table E.—(*Detailed.*)

	Complexion Light. Blue and Light Eyes.					Complexion Light. Eyes Grey.					Complexion Dark. Eyes Grey.					Eyes Dark.				
	R.	F.	B.	D.	Bl.	R.	F.	B.	D.	Bl.	R.	F.	B.	D.	Bl.	R.	F.	B.	D.	Bl.
Central—																				
Lonan	—	1	1	—	—	—	2	—	11	1	—	—	—	6	—	—	—	—	3	1
Onchan	1	2	—	—	1	—	3	2	7	—	—	—	3	1	1	—	—	3	6	2
Braddan and Douglas	3	2	1	1	—	—	23	28	35	2	—	—	9	20	5	—	—	5	26	15
Marown	—	2	—	—	—	—	6	2	9	—	—	—	2	6	1	—	1	2	7	—
German and Peel	7	—	—	—	—	—	12	9	14	1	—	—	9	10	6	2	—	—	12	9
	11	7	2	1	1	—	46	41	76	4	—	—	23	43	13	2	1	10	54	27
Southern—																				
Patrick	2	3	2	2	1	—	6	6	18	2	—	—	1	3	1	—	—	1	8	2
Santon	—	1	3	4	—	—	—	6	6	—	—	—	1	3	—	—	—	1	5	1
Malew	12	7	5	2	4	—	13	27	34	9	—	—	24	27	15	—	—	18	15	25
Arbory	—	5	1	1	1	—	2	6	11	4	—	—	3	3	1	—	—	3	5	4
Rushen	2	1	1	1	1	—	5	5	9	—	—	—	1	4	1	—	—	2	2	4
	16	17	12	10	7	—	26	50	78	15	—	—	30	40	18	—	—	25	35	36

TABLE E.—(*Detailed.*)

	Complexion Light.										Complexion Dark.									
	Blue and Light Eyes.					Grey Eyes.					Grey Eyes.					Dark Eyes.				
	R.	F.	B.	D.	Bl.	R.	F.	B.	D.	Bl.	R.	F.	B.	D.	Bl.	R.	F.	B.	D.	Bl.
Northern—																				
Bride	—	1	1	—	—	—	4	—	4	—	—	—	—	4	1	—	—	3	5	3
Jurby	—	2	—	—	—	—	4	5	3	1	—	—	—	2	—	—	—	5	1	—
Andreas	1	1	—	—	—	—	1	19	13	—	—	—	2	15	—	—	—	5	2	13
Ballaugh	—	3	—	2	—	—	9	4	4	3	—	—	—	2	7	—	—	—	3	2
Michael	2	—	—	—	3	—	—	4	6	3	—	—	6	6	—	—	—	—	2	2
Lezayre	1	1	2	—	—	—	5	16	21	—	—	—	5	6	—	—	—	4	4	9
Maughold	1	1	2	2	1	—	4	4	22	3	-	—	2	10	3	—	—	3	7	2
Island .. .. .. N	5	9	5	4	4	—	27	52	73	10	—	—	15	45	11	—	—	20	24	31
C	11	7	2	1	1	—	46	41	76	4	—	—	23	43	13	2	1	10	54	27
S	16	17	12	10	7	—	26	50	78	15	- -	- -	30	10	18	—	—	25	35	36
	32	33	19	15	12	—	99	143	227	29	—	—	68	128	42	2	1	55	113	94
	111					198					238					265				

TABLE E.—*Summary.*

	Complexion Light. Eyes Blue, Grey, or Light.						Complexion Dark. Eyes Grey.				Eyes Dark.					
	R.	F.	B.	D.	Bl.	Total.	B.	D.	Bl.	Total.	R.	F.	B.	D.	Bl.	Total.
361. North.. ..	5	39	58	88	15	205	15	51	11	77	—	—	20	27	32	79
Per cent. ..	1·4	10·8	16·0	24·4	4·2	56·8	4·2	14·1	3·0	21·4	—	—	5·5	7·5	8·8	21·8
751. South.. ..	27	93	101	154	26	401	53	77	31	161	2	1	35	86	62	186
Per cent. ..	3·6	12·3	14·1	20·4	3·5	53·9	7·1	10·3	4·1	21·5	0·2	0·1	4·8	11·3	8·2	24·6
335. Northern ..	5	36	57	77	14	189	15	45	11	71	—	—	20	24	31	75
Per cent. ..	1·5	10·8	17·0	23·0	4·2	56·4	4·4	13·4	3·3	21·2	—	—	5·9	7·1	9·2	22·4
362. Central ..	11	53	43	77	5	189	23	43	13	79	2	1	10	54	27	94
Per cent. ..	3·0	14·7	11·8	21·3	1·4	52·2	6·4	11·8	3·6	21·8	0·6	0·3	2·7	14·9	7·5	26·0
415. Southern ..	16	43	62	88	22	231	30	40	18	88	—	—	25	35	36	96
Per cent. ..	3·8	10·3	15·0	21·3	5·3	55·7	7·2	9·7	4·3	21·2	—	—	6·0	8·4	8·7	23·1
756. East[1]	18	85	107	170	26	406	49	86	27	162	—	1	42	83	62	188
Per cent. ..	2·4	11·2	14·3	22·4	3·5	53·9	6·5	11·2	3·7	21·3	—	0·1	5·5	11·0	8·2	24·8
356. West	14	17	55	72	15	203	19	42	15	76	2	—	13	30	32	77
Per cent. ..	3·9	13·2	15·4	20·4	4·2	57·0	5·4	11·8	4·2	21·4	0·6	—	3·8	8·4	8·7	21·6
718. East[2]	18	77	105	161	26	387	47	80	26	153	—	—	40	76	62	178
Per cent. ..	2·5	10·7	14·7	22·4	3·6	53·9	6·6	11·2	3·6	21·4	—	—	5·6	10·6	8·5	24·7
394. West	14	55	57	81	15	222	21	48	16	85	2	1	15	37	32	87
Per cent. ..	3·5	14·0	14·6	20·1	3·8	56·3	5·3	12·3	4·1	21·7	0·5	0·3	3·8	9·2	8·2	22·0

[1] With Marown. [2] Without Marown.

TABLE E.—*Summary.*

	Complexion Light.						Complexion Dark.				Eyes Dark.					
	Eyes, Blue, Grey or Light.						Eyes Grey.									
	R.	F.	B.	D.	Bl.	Total.	B.	D.	Bl.	Total.	R.	F.	B.	D.	Bl.	Total.
167. North-east ..	1	16	25	49	4	96	7	20	4	31		—	10	16	14	40
Per cent. ..	1·2	9·6	14·9	29·4	2·4	57·5	4·2	12·0	2·4	18·6	—	—	6·0	9·5	8·4	23·9
168. North-west ..	3	20	32	28	10	93	8	25	7	40	—	—	10	18	7	35
Per cent. ..	1·8	11·8	19·0	16·7	6·0	55·3	4·7	14·9	4·2	23·8		—	6·0	10·7	4·2	20·9
233. East central ..	4	33	32	54	4	127	12	27	6	45	—	—	8	35	18	61
Per cent ..	1·8	13·8	13·9	23·2	1·8	54·5	5·1	11·6	2·6	19·3	—	—	3·5	15·0	7·6	26·2
129. West central..	7	20	11	23	1	62	11	16	7	34	2	1	2	19	9	33
Per cent. ..	5·4	16·3	8·6	16·9	0·8	48·1	8·6	12·3	5·4	26·4	1·6	0·8	1·6	14·7	7·0	25·5
318. South-east ..	12	28	48	15	18	164	28	33	16	77	—	—	22	25	30	77
Per cent. ..	3·8	8·7	15·2	18·2	5·7	51·6	8·7	10·4	5·0	24·2	—	—	6·9	7·8	9·4	24·2
97. South-west ..	4	15	14	30	4	67	2	7	2	11		—	3	10	6	19
Per cent. ..	4·1	15·5	14·4	31·0	4·1	69·0	2·1	7·2	2·1	11·4	—	—	3·1	10·3	6·2	19·6
96. Jurby, Ballaugh, Michael	2	18	13	15	10	58	6	10	7	23	—	—	5	6	4	15
Per cent. ..	2·1	18·8	13·6	15·6	10·3	60·4	6·3	10·3	7·3	24·0	—	—	5·2	6·3	4·1	15·6
93. Maughold, Lonan..	1	8	7	35	5	56	2	16	3	21	—	—	3	10	3	16
	1·1	8·6	7·5	37·5	5·4	60·2	2·2	17·2	3·2	22·6	—	—	3·2	10·8	3·2	17·2

TABLE F.—*Stature.*

Parish.	Average.	Tallest.	Shortest.
	ft. in.	ft. in.	ft. in.
Bride .. .. .. E (8)	5 7·50	5 11	5 3
Jurby .. .. .. W (1)	5 8·25	6 0	5 4
Andreas .. .. .. W (11)	5 7·33	6 1	5 4
Ballaugh .. .. .. W (2)	5 7·95	5 11	5 4
Michael .. .. .. W (3)	5 7·85	5 11	5 3
Lezayre .. .. .. E (7)	5 7·61	6 1	5 3
Maughold and Ramsey .. E (8)	5 7·50	6 1	5 3
Northern Parishes	5 7·71	6 0	5 3·43
Lonan .. .. .. E (14)	5 7·27	5 11	5 3
Onchan .. . .. E (10)	5 7·47	6 0	5 4
Braddan and Douglas .. E (13)	5 7·30	6 2	5 3
Marown .. .. .. C (12)	5 7·32	6 5	5 3
German and Peel .. W (17)	5 7·20	6 1	5 3
Central Parishes	5 7·31	6 1·40	5 3·20
Patrick .. .. .. W (5)	5 7·80	6 1	5 3
Santon .. .. .. E (16)	5 7·22	6 2	5 3
Malew and Castletown .. E (6)	5 7·65	6 1	5 4
Arbory .. .. .. E (4)	5 7·84	6 1	5 4
Rushen .. .. .. W (15)	5 7·26	6 3	5 3
Southern Parishes	5 7·55	6 1·60	5 3·40

Average height for the whole Island, 5 feet 7·52 inches.

TABLE F.

	Average stature.	N.	C.	S.	Total.
	ft. in.				
Labourers	5 7·61	205	225	279	709
Joiners	5 7·72	12	7	13	32
Tailors .. .	5 7·08	25	22	31	78
Weavers	5 7·43	42	33	28	103
Shoemakers ..	5 7·49	21	35	37	93
Blacksmiths ..	5 7·44	9	4	5	18
Hatters	5 7·32	5	7	2	14
Barbers	5 7·18	2	6	3	11
Masons	5 7·45	3	3	4	10
Other trades ..	5 7·25	11	20	13	44
Average of trades..	5 7·37	335	362	415	1112

ANTHROPOLOGICAL MISCELLANEA AND NEW BOOKS.

Readers of the Journal are invited to communicate any new facts of especial interest which come under their notice. Short abstracts of, or extracts from letters, will be published at the discretion of the Editor. Letters should be marked "Miscellanea" and addressed to The Secretary, 3, Hanover Square, W.

The following extracts are from "The Australasian," April 17th 1897.

Professor Baldwin Spencer will shortly publish a book on the experiences summarised below. The work will be awaited with interest by all students of primitive social life.

Some Aboriginal Ceremonies.

The proceedings of the Royal Society (Melbourne) were made memorable last week by Professor Baldwin Spencer giving an account of the experiences of Mr. J. F. Gillen and himself among the blacks of Central Australia during the summer of 1896–7. Professor Spencer left Melbourne last October for Central Australia—country he had previously visited as a member of the Horn Expedition—on purpose to be present at certain unusual ceremonies. Mr. Gillen's residence of fourteen years among the Aruntas of Alice Springs in Central Australia has enabled him to associate with them on terms of the closest intimacy, and it is fortunate for science that he has so well used his leisure in the desolate solitude of a far inland telegraph station. Professor Spencer visited the district as a member of the Horn Expedition three years ago, and has ever since been in constant correspondence with Mr. Gillen. On two occasions he has faced the privations of the climate at the only period of the year when he was free, namely, during the University vacation. When in Central Australia, at the height of summer, the thermometer is usually about 150° in the sun, and never falls below 100° even at night. In order that both Mr. Spencer and Mr. Gillen might be present at the fire ceremony, which is the most mystic rite of all, Mr. Gillen, who is looked on as a full member of the tribe, sent round the "hand-beckoner," a *churinya*, or sacred stone, whose summons

no black would dare to disobey. For eighteen months preparations were being made, and early in the summer of 1896–7 the tribe began to assemble at Alice Springs.

Here for four months Professor Spencer made his head-quarters. In order to be at hand when all the rites were being performed, Mr. Gillen and the professor occupied a wurley (native hut) built on the sacred ground, and provisions were brought out from the station. Driven to desperation by flies, which had to be actually brushed off every article of food while it was being put into the mouth, slowly grilling under the tropic sun, and choked by the clouds of dust which every gentle breeze raised, the two observers had to make notes, take photographs, and measure natives for scientific purposes, when other employment slackened. The uncertainty as to when and where the next ceremony would take place kept Mr. Spencer and Mr. Gillen at all times on the *qui vive*, and on several occasions they had to tear after the blacks at mid-day over two or three miles of scrubby, stony ground, carrying heavy full-plate camera and notebook to get an accurate record of what was going on. In all, two hundred photographs were taken under extremely trying conditions. It is little wonder that the many friends of Professor Spencer were rather shocked to see him looking so parched and sun-dried on his return to civilisation.

Initiation Rites.

The Arunta tribe, like several other Australian tribes, is divided into sections or classes, which are four in number. In their details the relationships of these classes are very complicated, and are fixed by definite rules which are carefully observed by the blacks. It may be briefly stated that a man must marry out of his own class, while the children belong to yet a third class, certain members of which class are then his tribal brothers and sisters.

There are four grades of initiatory ceremonies which an Arunta man must go through before he becomes a full member of the tribe. Up to about ten years the boy lives in the women's camp, and accompanies them in their search for such food as roots, seeds, grubs, and the like. His tribal brothers then paint him on the chest and back, and he is thrown up into the air and caught. This is supposed to be beneficial to his growth. After this he now lives in the bachelors' camp, and accompanies the bachelors on their hunting expeditions.

Eight or ten years later he has to submit to circumcision and subincision, as described by Dr. E. C. Stirling and Mr. Gillen in the results of the Horn Expedition.[1] After that he may take a wife, and engage in other ceremonies. In the tribes of Eastern Australia this stage is marked by the knocking out of one of the front teeth, a ceremony to which a good deal of importance is attached. Amongst the Aruntas, though a front tooth is occasion-

[1] "Report on the Work of the Horn Scientific Expedition to Central Australia." Part IV. Anthropology. London. Dulan, 1896.

ally knocked out, yet the habit seems devoid of any sacred import, and appears to be a survival, the meaning of which is forgotten.

Totem and Churinya.

When the candidate has reached thirty, or in some cases forty years, he takes part in two sets of ceremonies which extend over several months, and it was these ceremonies which Messrs Spencer and Gillen had such unique opportunities of observing. The first set deals with the various totems of the tribe. There are very large numbers of totems in the tribe, and to one of these each black owes allegiance, and may be called by its name. Some may be kangaroos, others native peach trees, others dingoes or witchetty grubs, and so on. It has long been known that the marriage rules of the Arunta were governed, not by the totems, but by the classes previously alluded to, and why certain persons are attached to certain totems is one of the most peculiar and important results which Messrs. Spencer and Gillen have obtained. Closely interwoven with the idea of the totem is the significance of the *churinya*, or sacred stones and sticks. These objects are flat, oval, or elongate pieces of stone or wood, carved all over with incised lines which, in the Central Australian tribes, are circles or segments of circles, while in Western Australia they take the form of zig-zag lines. Each man has his own *churinya*, which is apparently looked on as another embodiment of himself, and yet at the same time it possesses a mysterious sacred significance. The women and the uninitiated are not allowed to look at it. The carvings on the *churinyas* of persons of the same totem are very similar. The *churinyas* are not kept by the blacks to whom they belong, but they are carefully hidden in some definite locality by one or two of the old men, each totem having its own particular set of such stations. The blacks state that in the "dream-times" of the far distant past, when their ancestors came into the country, those of each totem kept strictly by themselves. At this time they are not quite clear as to whether those whose totem was, say the wild duck, were really human beings, or partly the animals or plants the names of which they bear.

The lines of these migrations are related in great detail in their traditions, and each camping ground is exactly located, so that the whole country is interlaced with lines of route, and dotted over with innumerable camps. When one of these "dream-time" ancestors died, he was turned into a spirit-child, and as such dwells near one of the camping grounds, always carrying in his hand one of the *churinyas*. Conception is believed to take place by the entry of one of these spirit-children into the mother, the spirit-child dropping his churinya on the ground at the time. On the birth of the child the place is searched for the lost *churinya*, and by the kindly offices of one of the old men the search is usually successful. If it be not, a wooden one is made of hard-wood, such as mulga. The stone *churinyas* are the more ancient

form, and do not appear to be made at the present day. This then fixes the totem for the individual, and explains why in the Arunta tribe the child is not of the same totem as one of the parents, as is the case in some of the neighbouring tribes of Central Australia.

The members of each totem have a ceremony connected with their totem, which they alone are allowed to perform, and which has for one of its objects the increase of the animal or plant from which the totem takes its name. The eating of this animal is not tabooed to those who bear its name, as is frequently the case in other parts of the world; in fact, it is considered necessary for the chief performer to eat portion of his totem, or the ceremony will [illegible].

General Programme.

In their general plan these ceremonies are much alike. The chief performer is elaborately decorated with patterns in eaglehawk down stuck to his body with blood drawn from some member of the party. This down is coloured red and yellow with ochre; other parts of the body are smeared with a black pigment mixed with grease. The amount of blood drawn on these occasions is at times surprising, it being estimated that one man allowed five half-pints to be taken from him during a single day. The decoration of this performer is completed while the black candidates, if they may be so termed, are away hunting. On their return to the sacred ground they dance vigorously round him for some time. In most of these performances the decorated men then imitate the actions of the animal whose totem they bear, and in some cases the acting is described as wonderful. In one mock combat two performers represented two eaglehawks struggling for a bone, and wildly flapping their wings, which were represented by a bunch of gum leaves in each hand.

The "parra," or sacred ground, was laid out with great care, and one of the most peculiar sights was to see the candidates lying in a row with their heads close to a long bank of earth, as they were required to do during most of the nights. Absolute silence was entailed, and the strain during the months through which the ceremonies lasted must have been great, and have considerably influenced the hysterical, exalted frame of mind which they at times showed.

Fire Rites.

After a month devoted to preliminary rites the fire ceremonies began. The men to be initiated formed into a body and holding a shield of gum leaves over themselves, went to the women's camp. They were accompanied by a number of the old men swinging bull-roarers. This seems to be the only occasion on which the women, on hearing the dread sound, do not run and hide themselves, nor are they at any other time allowed even to gaze upon the sacred implement. The women, who were

prepared, ran at the body of men, and threw burning branches on to them, which the men tried, not very effectually, to ward off with their roof of leaves. This ceremony was repeated daily for about a fortnight. Next, a large fire, about 20 feet across, was made and covered with green leaves; on this terrible heap the candidates lay for some time, several at once, others calmly standing by and waiting their turn. The heat of the fire was very considerable. Professor Spencer knelt on the heap to try it, but could not endure it, even with thick trousers on. This performance was concluded by all present howling and hurling firesticks about.

During the evening, when all the candidates were lying in a row as usual, one of the old men seated himself before them with a decorated piece of wood which he held upright, and slowly and steadily knocked on the ground. At each side of him another old man sat holding his wrist, and assisting in this wearisome work, which, with most remarkable endurance, was kept up without a pause from half-past nine at night till about five next morning.

The number of candidates was very large, there being more than a hundred who were initiated. On the day following the final ceremony took place, the men crossing over to the women's camp, and each kneeling on a fire there.

Concluding Notes.

Each of the old men who were directing operations had men of his own totem under his charge, and for whose proper initiation he was responsible. During the whole period of nearly four months they were not allowed to speak to him. At the conclusion of the rites they had to bring him some food-offering, such as cooked wallaby, and begged him to make them speak. He then touched their lips, and the ban of silence was removed.

A good deal of the significance of many of the ceremonies has probably been lost, but their main object seems to have been to test the endurance of the young men, and to teach them the past history of the tribe, while the possession of a knowledge of the correct method of procedure by the old men, who practically formed a council for the administration of the whole series of rites, would naturally cause them to be held in high esteem.

As this ceremony is only performed at intervals of many years, it is more than likely that, with the advance of the white man, the present may be the last occasion on which it will be performed with the completeness in which it was witnessed by Professor Spencer and Mr. Gillen. The results so laboriously obtained are consequently of peculiar value.

A West Australian Custom.

The following paragraphs occur in an account of a trial in West Australia in the present year, and are interesting for the mention of a curious custom They are from "Northern Public Opinion," Roebourne, March 6th, 1897 :—

Jimmy, *Robert*, and *Duncan*, aboriginal natives, were charged with the murder of another aboriginal named Harry at Mallinnini Well, Yule River, on or about December 20th last.

Minnie stated that she worked for Mackay Bros. Her husband (Harry) and herself were working sheep at a well in Mackay's paddock. Four natives, namely, Jimmy, Robert, Duncan and Traveller, collected at a well called Mallinnini for the purpose of killing Harry. When witness came to the well they asked her where Harry was, and witness said she did not know. Prisoners then said if she did not tell them at once where he was they would kill her. Told them Harry went up the river to look for a turkey. The prisoners Jimmy and Robert went up the river to look for Harry, and the other prisoner (Duncan) stayed at the well with witness and Traveller. Jimmy and Robert took a spear, tomahawk, and knife with them. Subsequently witness went with Duncan and Traveller to where they found Harry's body; it was not buried, but lying on the surface, a little distance from the Turner Creek. *Jimmy gave witness some of deceased's fat; he also gave some to other natives.* Subsequently Jimmy and Robert went back to a well on Cobaland station.

The following is copied from "The British North Borneo Herald," April 16th, 1897 :—

Malay Card Games.

The following from the "Selangor Journal" gives an account of card games as played in that State. Perhaps some of our energetic District Officers will supply us with a similar list inviting the local words in place of those printed below for our next Asiatic "Journal." We shall be happy to forward proofs of this article for the necessary corrections.

The following are the names of the cards used in Selangor :—

Hearts—*Lekok* or *Pangkah*.
Diamonds—*Retĕn* (*retim*) or *Chiduk*.
Clubs—*Klawer*.
Spades—*Dayong Kling* or *Sakopong*.
King—*Raja*.
Queen—*Proh* or *Nyonya*.
Knave—*Pĕkak* or *Hamba*.
Ace—*Sat*.
To shuffle—*Banchoh* or *Menggaul*.

To deal—*Membagi.*
To cut—*Krat.*
To sweep the board—*Merelong* or *Mengglong.*
To pay all round—*Membider chingkeh.*
A picture or court card—*Angkong* or *Kuda.*
A three—*Jalor* (*e.g.*, two threes—*dua jalor*).
A card (ordinary)—*Daun.*
A sequence—*Glik* (*Daun sa-glik*).

The three most important card games are: (1) *main sakopong*: (2) *main chabut*; (3) *main tiga 'lei* or *pakan.*

1. In the game called *sakopong* all cards from two to six inclusive are cast out, and five cards are dealt out to each of the players (who may be from two to four in number); a player leads (*turunkan*) the card and the next player has either to follow suit (*turun-kan daun sagaji*) or throw down a card, turning it over (*susupkan*). If the next player is able to follow suit whoever plays the highest card of the suit wins. If each player wins a trick, it is declared drawn (*sri*), and in this case all stakes are returned.

2. *Main chabut* is a variation of *vingt-et-un*, but with thirty-one points[1] (the Javanese, however, play with twenty-one points as in Europe). Two cards are dealt by the dealer (*perdi*) to each player, who draws (*chabut*) fresh cards from the bottom of the pack in his turn and gets as near as possible to thirty-one. If he thinks he cannot safely draw another card (*e.g.*, after twenty-six pips are in his hand) he "passes" (which is called "*blit kechil*" if he stops at twenty-six, twenty-seven, or twenty-eight, and "*blit besar*" if he stops at twenty-nine or thirty).

If he obtains exactly thirty-one pips, he is said to "enter the points" (*masok mata*); but no player can draw more than seven cards, and if he has after drawing to the full limit still failed to obtain as many pips as he wants, he is said to "enter the pack" (*masok daun*). I may add that the first two cards are called "*lunas*," and this may be of various kinds—*e.g.*,

(1) *Lunasnikah*—*i.e.*, *angkong dengan sat* (a court card and an ace);

(2) *Kachang di-rendang di-tugalkan*—*i.e.*, two aces; a very convenient hand, as the aces may be reckoned as either one or eleven as occasion may require;

(3) *Lunas sa-glabat* or *sagaji ampatblas*—*i.e.*, *angkong dengan daun ampat* (court card and four);

(4) *Lunas dua jalor*, two threes;

(5) Ace and two, which is the best of all.

In playing "*chabut*" the tens should be cast out (*di-buang daun puloh*). When two players have the same number of pips—*e.g.*, nine and nine or eight and eight, the coincidence is described in the words "*Jumpa di-jalan, di-adu, kalah, di-chabut, mati.*"

[1] This article was originally composed some time ago, and I have since learnt that the game is played both ways by the Malays. If 21 points only is the game, court cards are not counted; but if the game is 31 points they are also added in.

And again, when a player has obtained, let us say, twenty-six pips with six cards, and so has only one more chance, and is afraid to risk it, his position is ridiculed in the phrase "*Sa-nepak Ulu Klang*," a jest of obviously local coinage.

The phrase "*Tengah tiang*" (half mast), again, is applied to twenty-five pips held irrespective of the number of cards; and if more than thirty-one are obtained, the player is said to be out (*mati* or *masok piring*).

(3) *Daun Tiga lei* or *Pakau* is played here as follows:— Three cards are dealt by the dealer to each player and the winner is he who holds the greatest number of pips, with certain exceptions.

Daun trus
- The best hand is three aces (*tiga sat*);
- The next is three threes (*tiga jalor*);
- The next is three tens (*tiga puloh*);
- The next is three court cards (*tiga angkong* or *tiga kuda*.)
- Of other hands the best is a remainder of nine pips left after deducting ten from a hand of nineteen pips;
- The next is a remainder of eight pips and so on.

A hand of three threes, it will be observed, is the second best hand in Selangor, whereas in Perak, according to Mr. Maxwell, it is thrown away as the worst.

The stakes, which are deposited in two heaps by each player, are here called "*kapala*" and "*buntut*" (or *ekor*) respectively, and the "*kapala*" is generally though not always greater than the "*ekor*" in Selangor instead of the reverse. The latter can only be lost when a player sweeps the board. A single stake again is *podul*, but *bertuwi* is applied to betting between players, and *sorong* or *tokong* means to put down a stake before your rival replies with a counterstake (*bertéban* or *tápah*). A player who holds thirty exactly, is not out here—*e.g.*, he may hold a court card and two tens. To look at the bottom card is *menengo' angkatan*.

Mr. Maxwell gives a number of names and phrases applied to particular cards and combinations of cards to which I may add:—

Two nines and a two	...	*China Keh mengandar ayer;*
An eight and an ace (making nine) with a court card or a ten and two nines	...	*Sembilang bertelor;*
Two court cards and a nine	...	*Parak hari naksiang;*
The four of any suit	...	*Tiang jamban Lebei Ali.*

The explanation of *handuk kaki tiga*, as applied to an eight, appears to be that the eight has three pips on each side. "*Minta penoh*" means I want a six, and "*minta tombak*," I want two pips (or three, as the case may be).

Besides the above, there are miniature or bijou cards (*cheki*)—*e.g.*, *cheki duablas*, *cheki limablas* and *'tau* or *beretan daun sambilan*, etc., the *daun cheki* being distinguished by their borders, *e.g.*, *iyu kuching*, *iyu nyonya*, *iyu panjang*, *iyu merak besar*, *iyu kasut*; and again *gôpêt*, *gôpêt krang*, *gôpêt rintek*, *gôpêt lichin*; *babi*, *babi rintek*, *babi pusat*, *babi lichin*: *kau merah*, *kau bulat*, *kau lichin*; layer, layer *rintek*, layer *pitis*, layer *lichin*. Six to seven people play these games, which I hope to describe another time. A sort of whist is also played from time to time under the name of main *trûp*. At this game a trick is called *sapudi*; to sweep the board is *pukol tani*; and the players who get no tricks at all are said to be sold up (*kena kôt*).—W. S.

Vocabularies of the Bugilai and Tagota Dialects, British New Guinea. By the Rev. James Chalmers, with a brief note on the Western Papuan Dialects by Sidney H. Ray.

1. Vocabulary of the Bugilai Dialect.

Anger, *meliguamamagana*.
Banana, *agi*.
Death, *qadala*.
Drink, *nginana*.
Face, *yet*.
Foot, *maka*.
Hand, *trangqab*.
Head, *benegêt*.
House, *mādē*.
Hunt (kangaroo), *dakaliran*.
Husband, *monde*.
Knife, *yita*.
Life, *traama*.
Moon, *kak*.
Neck, *qata*.
No, *yāō*.
Noon, *yabadatukame*.
Pool of water (used as mirror), *angikanitra*.
Star, *qatai*.
Stomach, *kam*.
Sugar Cane, *wala*.
Sun, *yabada*.
Taro, *bie*.
Throat, *nangapa*.
Water, *agi*.
What? *eandadegapaina*.
Who? *aitrala*.
Wife, *gitram*.
Yam, *gilebea*.
Yes, *ōō*.

Kaka, the Great Spirit, whose abode and actions are unknown.
Yedo, the spirit of a man.
Bēmor, the place of departed spirits in the west.

Bugilai Numerals.

One. *Tarangesa*. (Small finger of left hand.)
Two. *Metakina*. (Next finger.)
Three. *Gingimetakina*. (Middle finger.)
Four. *Topea*. (Next to middle.)
Five. *Manda*. (Thumb.)
Six. *Gaben*. (Wrist.)
Seven. *Trankgimbe*. (Elbow.)
Eight. *Podei*. (Shoulder.)
Nine. *Ngama*. (Left Breast.)
Ten. *Dala*. (Right Breast.)

2. Vocabulary of the Tagota Dialect.

Ankle, *sirimi.*
Armguard, *mopa.*
Arrow, *sopara.*
Banana, *ioa.*
Beard, *makosamusamu.*
Bird, *paroai.*
Bow, *qar.*
Bowl of pipe, *aturuka.*
Boy, *nvao.*
Breast, *pup.*
Calf of leg, *sara.*
Canoe, *qaoa.*
Chest, *otaota.*
Chief, *qae.*
Chin, *muquota.*
Cloth, *koerasoai.*
Come, *anominana.*
Cut, as wood, *wagiu.*
Dance, *saram.*
Drink, *ieino.*
Drum, *warua.*
Ear, *tuap.*
Eat, *moistamumu.*
Eye, *pari.*
Father, *sauiki.*
Fight, *kuiera.*
Finished, *wanati.*
Fire, *jau.*
Foot, *nati.*
Forehead, *apora.*
Frightened, *goea.*
Girl, *kamuasera.*
Go, *peiana.*
Hair, *puna.*
Head, *kuna.*
House, *darimo.*
Husband, *sauogo.*
Knee, *waiwi.*
Knife, *giri.*
Lips, *tuper.*
Mother, *qam.*
Moon, *mano.*
Navel, *tumu.*
Net, *jena.*
No, *kewan.*
Nose, *miu.*
Paddle, *n.*, *uteara.*
Paddle, *v.*, *aruim.*
Peace, *keoa.*
Penis, *makap.*
Pig, *minao.*
Pipe, *tur.*
River, *arama.*
Road, *iwadigum.*
Run, *moroorodara.*
Sandbank, *karani.*
Scrotum, *pauta.*
Shallow water, *karikatara.*
Shoulders, *pauna.*
Sit down, *peakut.*
Stand up, *peramut.*
Stars, *durupa.*
Stomach, *daina.*
Stone, *tamaga.*
Sugar cane, *aiaba.*
Sun, *dari.*
Taro, *sese.*
Teeth, *kam.*
Thigh, *waika.*
Throat, *sukiupa.*
Tobacco, *sakopa.*
Toe, big, *putupudura.*
Tomahawk, *kabi.*
Tongue, *uo.*
Wait, *bigatura.*
Walk, *anworomo.*
Water, *mauka.*
Wife, *sarika.*
Woman, *moream.*
Wood, fuel, *atiati.*
Write, *dorodama.*
Yam, *ruma.*
Yes, *koe*, *io.*

Tagota Numerals.

One, *uradaga.*
Two, *mitiga.*
Three, *nau.*
Four, *mitiga mitiga.*
Five, *uradaga.*
Six, *motitaba nan.*
Seven, *motimaburnan.*
Eight, *turupinan.*
Nine, *itabanan.*
Ten, *motitatan.*

3. Maipua and Namau Numerals.

One, *monou*. (Little finger of left hand.)
Two, *rēēre*. (Next finger.)
Three, *kaupu*. (Middle finger.)
Four, *morēēre*. (Forefinger.)
Five, *aira*. (Thumb.)
Six, *aukora*. (Wrist.)
Seven, *mirika mako*. (Between wrist and elbow.)
Eight, *uā*. (Elbow.)
Nine, *ara*. (Shoulder.)
Ten, *ano*. (Neck.)
Eleven, *ame*. (Left breast.)
Twelve, *ūūkari*. (Chest.)
Thirteen, *amemekai*. (Right breast.)
Fourteen, *ano*. (Right side of neck.)

[In these Vocabularies the vowels are sounded as in German; *q* = *kw* or *qu* in "quite."]

4. Note on the Western Papuan Dialects by Sidney H. Ray.

The Bugilai Vocabulary was obtained by the Rev. James Chalmers at a small creek on the mainland of New Guinea, about sixteen miles distant from the island of Dauan. The people are not often seen, as they have no fixed abode and are sometimes far in the bush and at other times nearer the coast. According to one account the following tribes are associated with the Bugilai:—the Tebatalai, the Wasi, the Beralag, the Gaimalag and the Uibalag. Another account gives the names:—Tabatata, the Bera, the Buzi, the Drapa, the Mat, the Wasi and the Wiba. These names are of some interest and possibly connect the people with those of the Western Islands of Torres Straits.[1] The terminations *lai* in Bugilai, Tebatalai, and *lag* in Beralag, Gaimalag, Uibalag, are the words used in the islands to denote a clan or tribe. (Saibai, Dauan and Western Tribe generally *laig*, Eastern Tribe, Murray Islands, etc., *le*.) The first portion of the words Bugilai, Tebatalai, Beralag and Gaimalag, show the Saibai[2] words *bag*, cheek, *taba*, shoulder, *bero*, rib, *gaima*, abscess. This method of naming the clans is found also in the Western Islands of the Straits where are found the Kulkalaig, Gumulaig, Kauralaig and Badulaig, with names derived from *kulka*, blood, *gamu*, body, *kaura*, ear, and *bad*, ulcer.

Though there is this agreement in the method of naming the tribes, the vocabularies of Saibai and Bugilai show very few common words. With the language of the Dabulai, a mainland tribe to the east, the Bugilai shows some connection and the Dabu generally, has more agreement with the language of the Eastern

[1] See "Ethnography of the Western Tribe of Torres Straits," by Professor A. C. Haddon in "Journ. Anthrop. Inst.," vol. xix, pp. 297–440.

[2] Saibai is used as a collective name for the Western Tribe, though properly only the name of one island. Grammars and Vocabularies of these dialects will be found in "A Study of the Languages of Torres Straits," by Sidney H. Ray and Alfred C. Haddon in "Proc. Roy. Irish Academy," 3rd series, vol. ii, pp. 463–616, and vol. iv, pp. 119–373.

tribe of the Straits (Murray Islands) than with any of its nearer neighbours. This is illustrated by the following words :—

Drink ...	Bugilai	*ngi-nana*, Dabu *ine-noni*.
Foot ..	,,	*maka*, Dabu *mak*, Murray Is. *mek* foot-print.
Hand (palm) ..		*trank-qab*, Dabu *tang-kor*, Murray Is. *tag-gab*.
Head ...	,,	*beneqet*, Dabu *bunkut*.
House ..	..	*mãē*. Dabu *ma*.
Knife	..	*yitu*. Dabu *ata*.
Moon ..	..	*kak*, Dabu *qak*.
Neck ...	,,	*qatai*. Sabai *katö*.
Noon ...	..	*yabada-tukame*. Dabu *yabada-tukame-da*.
Sugar-cane	,,	*wala*, Dabu *wara*. Saibai *geru*, Murray Is. *neru*.
Stomach	..	*kam*, Dabu *kom*. *kam*, Murray Is. *kem*.
Sun ...	,,	*yabada*, Dabu *yabada*.
Throat ...	,,	*nangapa*. Dabu *nunkup*.
Water .	..	*ngi*. Dabu *ine*. Saibai *ni*.
Yes ...	,,	*ao*. Dabu *ao*, Saibai *wa*, Murray Is. *wao*.

The Tagota vocabulary was obtained by Rev. James Chalmers at a village on the south or right bank of the Fly River about forty-five miles distant from the north point of Kiwai Island, in Lat. 8° 25′ S. and Long. 142° 28′ E. Very little is known of the people.[1]

The Maipua numerals were obtained in the Purari Delta, east of the Fly Delta.

The Tagota language shows some agreement with the language which, with dialectical variations, is spoken on the island of Kiwai, on the adjacent mainland west of the Fly Delta, and on Bampton Island.[2]

There are also a few agreements with the Maipua, on the east, and with the Dabu and Torres Straits dialects. These are shown in the following table :—

Arrow ...	Tagota, *sopara*, Dabu *tabora*.	
Bow ..	,,	*gar*. Daudai and Saibai *gagari*.
Drum ..	,,	*warua*, Dabu *arap*, Saibai and Murray Is. *warup*.
Fire ..	,,	*jau*, Dabu *yu*, Maipua *iau*.
Forehead ...	,,	*apora*. Saibai *paru*.
Knife ...	,,	*giri*. Daudai *giri*.
River ...	,,	*arama*, Daudai *oromo*.
Star ...	,,	*durupa*, Maipua *dopo*.
Sun ...	,,	*dari*, Kiwai *sai*, Maipua *dare*. Found also as far east as Cape Possession, Toaripi, *sare*.

[1] A brief account of Tagota village and people will be found in the "Annual Report on British New Guinea for 1889–90," p. 48 [C.A. 105, 1890].

[2] In the "Study of the Languages of Torres Straits," these dialects are included in the general term Daudai.

Taro	...	Tagota, *sese*. Kiwai *saso*.
Thigh		,, *waika*, Daudai *wagi*.
Tobacco	. .	,, *sakopa*, Daudai. Saibai *sukuba*. Murray Is. *sukub*, Dabu *sakaba*.
Tomahawk	.	,, *kabi*. Daudai *kabi*.
Woman	. .	,, *moream*. Dabu *mure*.
Yes	...	,, *io*. Daudai *io*. Dabu *ao*.

With regard to the words given in Bugilai, Tagota, and Maipua for the numerals, it is probable that in some cases they are names of parts of the body, and not true numerals. The parts of the body touched when counting are indicated in brackets. In Maipua, *e.g.*, the words given for six, ten and twelve, appear in a vocabulary of the language[1] as *aukoro*, a cane gauntlet (on wrist), *ano*, the shoulder, *uukwari*, the chest.

Some of the Bugilai words given as numerals correspond, though not exactly, with Dabu names for parts of the body.[2] *Cf.*:

Metakina, two, finger next to little finger, with Dabu *mutukini*, middle finger.
Topea, four, forefinger, with Dabu *tupi*, forefinger.
Manda, five, thumb, with Dabu *mag*, thumb.
Gaben, six, wrist, with Dabu *gabun*, wrist.
Trankgimbe, seven, elbow, with Dabu *tang-kum*, elbow.
Podei, eight, shoulder, with Dabu *puder*, shoulder-blade.
Ngama, nine, breast, with Dabu *gnam*, breast.
Dala, ten, breast, with Dabu *dor*, chest.

These vocabularies confirm what I have elsewhere stated as to the great variety of languages in the Western Division of British New Guinea.[3] Some confusion arises through the Vocabularies appearing under various names, but it seems possible to distinguish the following groups:—

1. Elema (Toaripi or Motumotu) about Freshwater Bay. The Orokolo between Maclatchie Point and Alele River is not very different from the Elema.
2. Maipua, in the Purari delta. Vocabularies of Tumu and Evorra given by Mr. Bevan[4] are not very different.
3. Daudai, comprising Kiwai and Domori in the Fly delta, Perem (Bampton Island) and coast opposite (Mowat).
4. Tagota, up the Fly River.
5. Dabu and Toga, on the coast opposite Saibai.
6. Miriam, the Eastern Islands of the Torres Straits (Murray and Darnley Islands).
7. Bugilai, coast opposite Dauan.
8. Saibai, the Western Islands of Torres Straits.

[1] "Annual Report on British New Guinea for 1893–4," pp. 120–122.
[2] A Dabu Vocabulary is given in the "Annual Report on British New Guinea for 1890–91," pp. 128–132.
[3] "Journ. Anthrop. Inst.," xxiv. p. 16.
[4] "Toil, Travel and Discovery in British New Guinea," by T. F. Bevan. London, 1889.

The following short vocabulary exemplifies the differences of these dialects :—

English.	Head.	Sun.	Moon.	Star.	House.
Elema	*arofave*	*sare*	*papari*	*koru*	*uvi.*
Orokolo	*haro*	*hāre*	*papare*	*kou*	*vvi.*
Maipua	*uku*	*dare*	*ia* ..	*dopo*	*marea.*
Kiwai	*epuru*	*sai* ..	*sagana*	*gugi*	*moto.*
Mowat	*epuru*	*iwio*	*gamuao*	*oroi*	*mautv.*
Tagota	*kana*	*dari*	*mano*	*durupa*	*darimo.*
Daba	*buakut*	*yabada*	*qak*	*piro*	*ma.*
Miriam	*kĕrĕm*	*gereger*	*meb*	*wer*	*meta.*
Bugilai	*beneqet*	*yabada*	*kak*	*qatai*	*mā̄.*
Saibai	*kuiko*	*gouga*	*mulpulo*	*titui*	*lago.*

Vocabulary of Australian Aborigines in the neighbourhood of Cooktown, North Queensland. By Richard Phillips, with a note by Sidney H. Ray.

[The unmarked words were collected by Mr. Phillips. A few others collected by Captain Cook. Forster and Captain King have been added for comparison and completeness, and are distinguished by the letters C, F, and K. See following note.]

1. *Vocabulary. by* Richard Phillips.

Angry (with anger), *kooly dea.*
Animal, *minna.*
Ankle [*chongurn* C.
Arms. *ngakool* [*aco, acol,* C.
Astonishment (expression of). [*yarcaw! cherr, cherco, tut-tut* C.
At, of, *bee, bi.*
Bag, *oonyoon* [*charngala* C.
Beard, *walar* [*wallar* C. *wŏllah* K.
Belly [*melmal* F.
Bite, *v. dindal.*
Black, *moonie.*
Blood, *garmbe.*
Boat, or ship, *ulal.*
Breast [*coyor* C.
Camp, *nangoor, yaamba.*
Canoe, *wangga, marakan* [*marigan* C.
Clay (edible white), *gammai.*
Cockatoo (white), *wandar,* [*wanda* C.
Cockatoo (black), *ngoorah.*
Cockle, clam [*moingo* C.
Come hither, *kattay-yeurigo,* [*hula, mūé* C.
Corroboree. *yoonbah-warrally.*
Cow or Bullock (animal-temples-wood-with), *minna walloo yoko dea.*
Dead, *beony, bieni.*
Disobedient (ears none), *milka mool.*
Dog, *gōta* [*cotta, kota* C.
Drink [*chuchula* C.
Drink (beverage), *boury.*
Drink (verb imperative), *pootala.*
Ear, *milka,* [*milkah* K.
Ears, [*melea* C.
Earth, *bobo* [*poapoa* C.
Eat [*boota-yatta* C, *bootina* F.
Eat (imperative), *pootala.*
Elbow [*yĕĕrwĕ* K.
Elder, *yaba.*

Eye [*cáree, me-ell* K.]
Eyes, *meel* [*meul* C.
Father, *bayba* [*dunjo* C.
Feathers [*tĕĕrr* K.
Fingers [*mŭngālbăh* K.
Fingers (first, second, third). [*egalbuiga* C.
Fingers (little), *ngakit*, [*eboornakil, nakil* C.
Fire, *yoco* [*meanang* C.
Fish, *goyo* [*poteea* C.
Fly (insect), *mowee* [*tabugga. chapaun* C.
Foot, *tamal* [feet=*edamal* C.
Forbidden, sacred, *tabool.*
Forehead, *walloo.*
Friend [*ītchēw* K.
Full, *dea, deor.*
Go along, away, or on, [*tatee, tahtee* K.
Go down, *takai.*
Hair, *moaree* [*morye* C, *morreah* K.
Hand, *mangal.*
Hands [*marigal* C.
Head, *campojo* [*wageegee* C
Heel [*kniorror* C.
Huts [*yēērkah* K.
Kangaroo, *kadar, ngargelin, wadar*, [*meauah* K, *kangooroo* C.
Kill, *v. koontal.*
Knees, *boongo*, [*pongo* C, *bongo* K
Leg [*peegoorga* F.
Less, wanting, minus, *mool.*
Liar, *wangawanga.*
Lie (or sit), *ningal.*
Lie (tell untruth), *wanga-mow*
Lips, *yeenbee* [*yoobe* C.
Living, *ngamboorgo.*
Loriquet [*perpere, pierpier* C.
Man, *bama.*
Mangroves, *barrabarra.*
More, *go, goora.*
Music, *goonbah.*
Nails (finger), *goolkee* [*kulke* C, *kolke* K.
Name, *poo-ree.*
Native cat [*quoll* C.
Navel, *moidyil* [*toolpoor* C, *toolpŏrŭ* K.

Neck, *ngakoo* [*doomboo* C, F.
Nipples, *gooyoo* [*cayo* C, *coyŏberrah* K.
None, no, *mool.*
Nose, *bóono*, [*bonjoo* C, *emerda, poteer* K.
Nose-stick, *tabool* [*tapool.*
Of, at, *bee, bi.*
Paddle *v.* [*pelenyo* C.
Paint (streaks of white) [*carbanda* C.
Parrot, *peerpeer.*
Pigment [*wŏparr* K.
Posteriors [*booca* F.
Quail *n.* [*kahkee, mōōllŭr* K.
River, *perie.*
Rope, *goombin* [*gurka* C.
Run, *v. dindal.*
Sea-sand, *yooal* [*yowall*, C.
Shake hands, (hands to it). *manyo nanga.*
Ship, boat, *vlal.*
Sit down [*takai* C.
Sit, lie, *ningal.*
Sky, *tyeeree* [*kere, kearre* C.
Sleep, *wango*, [*poona* C.
Smooth, *maimoon*, [*mier carrar* C.
Sole of foot, *tamal-daryol* [*ehumal* C.
Son, *yoomoor* [*jumurre* C.
Spear, *kalka* [*gulka*, C.
Spirit, ghost, *wow.*
Stomach, *gambool.* [*gippa* C.
Stone, *nambal*, [*walba* C.
Strike, kill, *koontal.*
Sun, *ngalan*, [*gallan* C. K.
Talk, words, *koko.*
Teeth, *moolir*, [*mulere, móle* C, *molear* K.
Temples, *walloo.*
Thighs, *kooman.* [*coman* C.
Thumb, *mangal-kangaroo*, [*eboor balga* C.
Toe (great), *tamal-kangaroo.*
Toes, *ēbĕrăh* K.
Tongue, *andar*, [*unjar* C.
Turtle (male), *aooeeah*, [*poinga* C.
Turtle (female), [*mamelingo* C.
Water, *pouri.* [*poorai* C.

White man, *wana.*
With accompanying, full, *deor, dea.*
Woman, *moonung-ai,* [*moobyel* C.
Womera (*throwing stick*), *melpairo, womera* [*melpairo melpier* F.
Wood, tree, *yoko,* [*yocou* C.
Yams, *gang-a,* [*maracotu* C.
Younger, *kaba.*

PRONOUNS.

I, *ngayu.*
Thou, *nundu.*
Thine, of or to thee, *nanoo.*
Its, of or to it, *nangoa.*
They two, *buola.*
What, *ana.*
What is your name? *pooree nanoo ana?*

NUMERALS.

One, *nopungo.*
Two, *gotera.*
Those two, *buola.*
Three, *couto.*
Any number more than three, *kargoa.*

2. *Note by* SIDNEY H. RAY.

Mr. Phillips has not indicated the orthography used in the Vocabulary, but it is evidently that common in Australian Vocabularies, *i.e.*, English, with *oo*=*u*, *ai* or *ay* for *ē*, *e* or *ee* for *i*, *ou* or *ow* for *au*, etc.

This vocabulary is of interest, as it comes from the place where Captain Cook and Forster collected the first list of words in an Australian language, Cooktown being on the south bank of the Endeavour River, where Cook beached his vessel for repairs in 1770. Fifty years afterwards, in July, 1820, the Endeavour River was visited by Captain King during his survey of the Australian Coast. He collected a vocabulary[1] and compared it with that of Cook, showing that the language of the aborigines had changed very little during the fifty years' interval. Mr. Phillips' Vocabulary is evidence of similar fixity after a further fifty years' interval. The vocabularies of Cook and King were reprinted by Curr in his book on the Australian Race.[2] No new information was then available.

The language of this notice seems to have a considerable range southward. Curr gives vocabularies from Weary Bay, Palmer River, Granite Range at head of the Mitchell River and from Walsh River.[3] All these show correspondence with words in this vocabulary from the Endeavour River or Cooktown.

[1] "Narrative of a Survey of the Intertropical and Western Coasts of Australia," by Capt. P. P. King. London, 1827, pp 368-369.
[2] "The Australian Race," by E. M. Curr, Melbourne and London, 1886, vol. ii, pp. 392-393.
[3] *Op. cit.*, vol. ii, pp. 394, 395, 398, 414.

Endeavour R. or Cooktown.	English.	Other Places.
walar ..	Beard	Weary B., Granite Range *walla.*
yaamba ..	Camp	Weary B., *yamba*, Granite R., *yampa.* Walsh R., *yumbunga.*
marakan ..	Canoe	Granite R., *murragan.*
kattay ..	Come	Weary B., *kuttai*, Granite R., *kutta.*
gota	Dog	Palmer R., *oota.*
meel	Eye	Weary B., *meil*, Granite R., *meei.*
goyo ..	Fish	Weary B., *kooea*, Palmer R., *oyi*, Granite R. and Walsh R., *koŋyu.*
moaree ..	Hair	Welsh R., *moora.*
campogo ..	Head	Palmer R., *ambogo.*
bama ..	Man (blackfellow)	Weary B., *bumma*, Granite R., *pumma*, Walsh R., *bamma.*
nopungo ..	One	Weary B., *nobin*, Granite R., *nupun.*
nagal ..	Sit	Walsh R., *nginna.*
wango ..	Sleep	Weary B., *warungo.*
kalka ..	Spear (war) ..	Weary B., Granite R., Walsh R., *kulka*, Palmer R., *ulka.*
gippa ..	Stomach	Weary B., *tepar*, Granite R., *juppa.*
ngalan ..	Sun	Weary B., Granite R., *ungar*, Walsh R., *kurry.*
cooto ..	Three	Granite R., *kartu.*
buola ..	Two	Walsh R., *boolerry.*
wana ..	White man ..	Weary B., *wangar.*
yoko	Wood	Weary B., Granite R., *toko.*

Many of these words have a very much wider range.

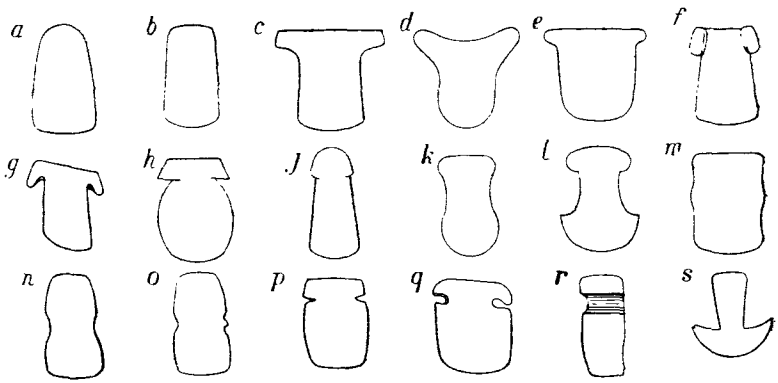
3. *Native Names of Places near Cooktown, by* RICHARD PHILLIPS.

Cooktown, *Gangarie.*
Grassy Hill, *Gambil.*
Mount Cook, *Wainbār.*
Little Mount Cook, or Olive's Hill, *Kaiar.*
Sloping Hill, *Gobör.*
Country near Göbör. *Yergoa.*
Peak east of Keating's Gap, *Yerawarita.*
Mahmie Peak, *Kanirindungeri.*
Peak west of same, *Tokortokal.*
Normanby Range. *Yangal.*
Table Top Mountain, *Kalkaoonda.*
Connor's Knob, *Kapoondakatty.*
Mount near Fullers, Upper Endeavour, *Boolbil.*
Patrick's Point, *Golay.*
Mount Saunders, *Milngar.*
Sierra between Mt. Saunders and Indian Head, *Yaiyoo.*
Indian Head, *Yeta.*
Old Mission Station, Cape Bedford, *Goongoor.*
New Mission Station, Cape Bedford, *Dayda.*
Freshwater lake near Cape Bedford, *Mantyil.*
Endeavour River, *Toolga.*
Annan River *Yakoor.*

An Ethnographical Collection from Ecuador.

DURING his expedition to the Great Andes of the Equator not many years ago, the well-known Alpine explorer Mr. Edward Whymper made a considerable ethnographical collection, procured in the neighbourhood of Quito and of various other places. The collection consists chiefly of stone implements and pottery, and has been partially figured in Mr. Whymper's book; but its acquisition by the Christy Collection of the British Museum has made it possible to study the objects in greater detail. Ecuador is a district of peculiar interest, for towards these high valleys converge the influence of Peru on the one side, and that of Colombia and Central America on the other. Influences from the less civilised Indian tribes lying to the east of the Andes are also perceptible, connecting the arts of the North Western peoples with those of the Amazon tribes, and the inhabitants of Venezuela, Guiana, and the West Indian Islands. Thus, distinct forms of stone axe-heads are common to Peru, Ecuador, the Upper and Middle Amazon, Venezuela, Guiana and the Antilles. Stone implements, pottery vessels and such-like objects form an important part of the unwritten archives of these regions, and fortunately they are still to be found in numbers by those who are in a position to make patient search. Few people have used their opportunities better

FIG I.



a. Otovalo. $5\frac{1}{10}$.
b. Carranqui. $3\frac{2}{10}$.
c. Otovalo $3\frac{1}{2}$.
d. Cayambe. $3\frac{1}{2}$.
e. Otovalo. $4\frac{4}{10}$.
f. Cayambe. $4\frac{1}{2}$.
g Olalla, near Quito. $3\frac{3}{10}$.
h. Quero near Riobamba. $4\frac{2}{3}$.
j. Quito. $5\frac{1}{2}$.
k. Quito. $3\frac{7}{10}$.
l. Riobamba $4\frac{1}{4}$.
m. Cayambe. $4\frac{1}{2}$.
n. Cayambe. $3\frac{1}{2}$.
o. Cayambe. $3\frac{9}{10}$.
p. Near Riobamba. $3\frac{1}{2}$.
q. Penipe. $3\frac{1}{2}$.
r. Penipe. 5.
s. Santa Lucia, Quito $2\frac{7}{10}$.

(The numerals in each case denote inches. *p*. is drawn too long between the lateral notches and the edge. The butt of *l* is not quite accurate.)

than Mr. Whymper; to almost every specimen he has affixed the locality in which it was procured. The objects collected by him have therefore a considerable value, and can take their place as documents, which may some day be of great use when the blank spaces of South American history come to be filled up. The best source of information on the arts of the South American peoples is Dr. Max Uhle's "Kultur und Industrie der Südamerikanischer Völker," Berlin, 1889.

In view of the exceptional situation of Ecuador, it is not surprising that the variety of forms of stone axes should be exceptionally large. The contrast with Colombia is in this respect very striking. In the accompanying outlines, a number of these types are given for purposes of comparison with similar forms occurring elsewhere.

The plain forms, Fig. I, *a* and *b*, occur commonly both in Colombia and Peru. They seem to be almost the only Colombian forms which cannot be easily traced to a foreign source. The type with lateral arms at the butt, represented by Figure *c*, seems to have come from Peru, and is there found both in stone and bronze. From Peru it passed into Bolivia, and through Ecuador into Colombia. An exactly similar specimen to *c*, but smaller, was dug up two or three years ago, at Highgate, St. Catherine, Jamaica, by Inspector F. S. Church, whose collection was acquired by the British Museum last year. This is but one of the numerous instances of resemblance between types common to the Antilles and Ecuador, though, as would be naturally expected, these resemblances are most frequent in the islands most accessible to the South American Continent.

Form *d* may be is a variation of *c*. Here again the depression at the butt finds a parallel in a West Indian axe-head in the British Museum. Form *e* is a beautifully finished example. It belongs to a type conjectured by Dr. Uhle to be a late development, and which seems to have reached perfection in Ecuador. But in Egypt, where forms *c* and *e* are both known, *e* appears to be the older. It is found in miniature, and of copper, in Foundation Deposits from the IVth Dynasty onwards, and of bronze in a size suitable for practical use.

Professor Petrie has also discovered this form at Kahun in stone and chert, belonging to the XIIth Dynasty.[1] But whichever form is the older, the occurrence of both in culture-areas so wide apart as ancient Egypt and Peru would seem to show that one form may be a natural development of the other, or that both may have developed normally on parallel lines. All the examples of *e* in the collection come from Cayambe, Otovalo and Carranqui.

Forms *f* and *g* have ears of another kind. In *f* they are raised, while in *g* they are in the same plane as the surface of the axe: the obliquity of the butt in *g* is worthy of notice. Both types are represented in the Stubel collection, and *g* occurs also in Peru.[2]

[1] Petrie, "Ten years' digging in Egypt." London, 1892, p. 112.
[2] Uhle, *l.c.* Plate XVIII, Fig. 3.

The examples of *f* are from Quito, Otovalo, Cayambe; of *g*, from Quito, Cayambe and Penipe.

Form *h*, all examples of which are from the neighbourhood of Riobamba, has not an exact parallel in Uhle (but of Plate XV, Fig. 16). The ears are more sharply cut than in the case of rather similar forms, common to Peru and the Antilles. Form *j* seems a variant of the same type. Form *m*, with its bulging sides, recalls an axe-head from Guiana.[1]

The forms *k*, *l*, *n*, *o*, are all distinguished by incurved sides. Form *l* resembles some Peruvian bronze axes. With form *p*, a distinct type is reached, and one which originates, according to Dr. Uhle, not in cultured Peru, but among the less civilised Indians dwelling on the eastern slopes of the Andes. The method of filing out the lateral notches was possibly by means of a cord used with sand. On the River Napo the binding of these axes is covered by a thick coating of beeswax-mastic[2]. More than one of the figures given by Uhle come from Mácas, and were made by the Jivaro Indians. The type has had a wide distribution both to east and west. In the west it has penetrated Ecuador and Peru, Mr. Whymper's specimens coming from Riobamba and the neighbourhood. In the east an extensive trade seems to have existed as far as the Middle Amazon and the lower course of its tributaries: for in these countries stone for axes was difficult to procure.[3] It reappears in Venezuela, Guiana (Im Thurn, Plate X, 3) and the Antilles, all of which must have been separate centres of production. Although lateral notches are known in North American axe-heads, this particular method of producing them appears to be South American. Dr. Uhle is of opinion that the employment of the same technique in the various regions above mentioned affords ample proof of culture-relationship.

The stone axe-hammer, *r*, grooved on three sides only, is of a type well represented in North America. It is from Penipe, the two examples figured by Dr. Uhle coming from Quito and Riobamba. The collection also possesses two double-headed stone hammers of smaller size with the groove in the middle.

Fig. *t*, from Santa Lucia, near Quito, resembles Uhle's Fig. 22, Plate XVII, also from Quito, which is called a cutting implement. There is a larger stone implement of similar shape, from Minas Geraes, Brazil, presented to the British Museum by Sir Joseph Hooker, but here the butt is proportionately shorter.

In Figure No. II, are shown various kinds of pierced axes. Forms *a–f* seem to belong peculiarly to Ecuador. They are principally of a serpentine-like green stone, and the position of the perforation varies from the neighbourhood of the butt to that of the edge. Perforations are usually made from both surfaces, meeting in the centre, but often they are almost entirely completed

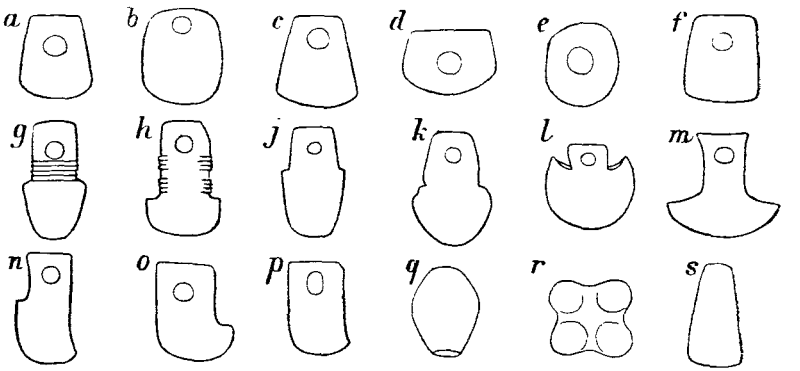
[1] Im Thurn, "Among the Indians of Guiana." London, 1883. Plate X, Fig. 5.

[2] Sir J. Evans, "Ancient Stone Implements," pp. 170, 171. London, 1897.

[3] Uhle, *l.c.*, p. 44–5.

from one side only. Some of these specimens have fair edges, but some are so very blunt and yet so heavy and long, as to suggest

FIG. II.



a. Otovalo. $3\frac{3}{4}$.
b. Cayambe. $4\frac{1}{2}$.
c. Otovalo. $4\frac{1}{2}$.
d. Cayambe. $3\frac{5}{8}$.
e. Cayambe. $3\frac{1}{8}$.
f. Otovalo. $4\frac{3}{10}$.
g. Sieses, near Cuenca. $3\frac{3}{10}$.
h. Olalla, near Quito. 4.
j. Cayambe. $4\frac{1}{10}$.
k. Guana, near Riobamba. $2\frac{9}{10}$
l. Guana, near Riobamba. $3\frac{7}{10}$.
m. Cuenca. $5\frac{9}{10}$.
n. Otovalo. $4\frac{3}{5}$.
o. Cayambe. $2\frac{4}{5}$.
p. Cayambe. 3.
q. Cayambe. $1\frac{9}{10}$.
r. Otovalo. $2\frac{3}{8}$.
s. Otovalo. $5\frac{1}{4}$.

(The numbers following the names indicate the length of each object in inches.)

that they were never intended for cutting, but for some other kind of work. This is the case with *b* and *f*. There is, however, in the British Museum a stone axe-blade from Valdivia, Chile, more than 12 inches long, and with the hole only an inch from the butt. The type represented by *f* is supposed by Dr. Uhle to have been used for some agricultural purpose, and not as an axe. Mr. Whymper's examples are not all perforated cylindrically—*i.e.*, from one surface only, as seems to have been the case with those described by Dr. Uhle. Form *d* may be a variation of the same type.

The butts of many of these axes and axe-like implements are slightly grooved in a longitudinal direction to give them a better hold on the wooden haft against which they were bound.

Form *e*, almost worn to a ring, but with one approximately straight side, seems to be nothing more than a worn axe-head afterwards used as a hammer. Dr. Uhle,[1] however, appears to give such implements an independent origin. He figures two from Tiahuanaco, Bolivia, and two from Quito. Mr. Whymper's examples are from Otovalo, Cayambe, and Carranqui.

[1] *L.c.* pp. 46–7.

The symmetrical stone rings (*cf.* Uhle, Plate XIX, Figs. 3–6) are only represented by a single specimen from Quito.

The ornamental form *i* is not uncommon in Ecuador. It has been found in Cayambe, Riobamba, Quito, and the neighbourhood of Cuenca. There is one from Tumbaco in the British Museum (*cf.* Uhle, Plate XVI, Fig. 23). Form *j* is an axe of somewhat similar shape, of green stone, but very thin and without ornament. Form *k* is of buff-coloured stone and much thicker.

Form *l* from Guana, near Riobamba, is of very thin grey stone. There is an identical form in gilt bronze in the British Museum, conjecturally ascribed to Pindile, near Cuenca. Other shapes which occur in bronze at Pindile, but with angular instead of rounded edges, are not represented in the collection.

Form *m*, of bronze and with a very thick butt, is represented by two examples, one from Loja, the other from Cuenca. Both are Peruvian in type.

Forms *n o* are of an uncommon shape (*cf.* Uhle, Plate XVII, Fig. 5), and were found in Cayambe and Otovalo. The peculiarity of having one straight and one curved side is repeated in a much less carefully finished West-Indian stone axe in the British Museum. The form of the celt figured by Sir John Evans[1] is also recalled. The peculiar shape of this celt, from Mennithorpe, Yorkshire, is probably "due to the form of the pebble from which it is made." Perhaps forms *n* and *o* may have had some similar origin. Form *p* might have some analogy with *n* and *o*.

The type of axe with a groove running all round the butt (Uhle, p. 43) has no representative in the collection.

Fig. II, *q*, is a curious hollow object of green stone, the use of which is not easy to determine. It might be merely a receptacle, the mouth of which was closed by some kind of stopper; or it might be a cap to be fitted on the end of a stick, *e.g.*, a drill cap. Small pottery objects of rather similar shape but with holes in the ends or sides, have been found in Colombia[2] and at Jujuy in the Argentine Republic. (British Museum.)

Fig. II, *r*, is a stone object also of indeterminate use. It is four-sided, each side presenting four lobes. Between the lobes and crossing each other at right angles are shallow grooves, suggesting suspension on a cord. A similar form occurs in Patagonian bolas in the British Museum. The present object is smaller, but might have been used in the same manner.

Fig. II, *s*, is a pestle of white alabaster-like stone, with incised ornament at the upper end.

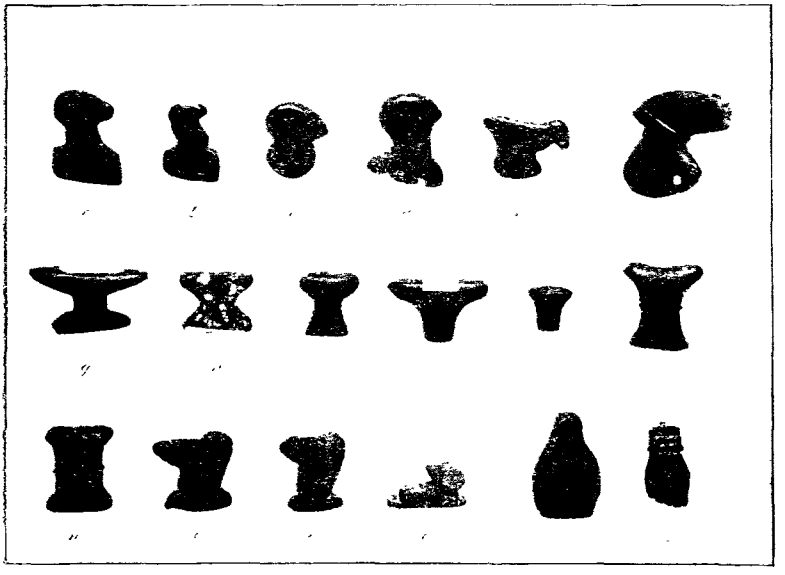
The small objects in Fig. III are interesting, though their use is uncertain. *a*, *b*, *c*, *d* are more or less conventionalised birds' heads of green stone, and have flat sides. The average length is a little over one inch. It is difficult to suppose them amulets, as *e* might have been, because in that case a second hole would

[1] "Ancient Stone Implements," p. 136.

[2] V. Restrepo. "Los Chibchas." Bogota, 1895. Atlas, Plate XXXIX, Figs. 118–119.

be superfluous; *d* may at one time have even had three holes. It seems more probable that the second hole was made in order that the objects might be fixed steadily to something. Still more puzzling is *f*. It also is of green stone and has a deep groove along the top, the broader end of which is just visible in the illustration. *h* and *j*, possibly also *m* and *n*, may be variations of the small anvil-shaped object *g*, which was found at Cayambe. They show no distinct signs of having been used as implements, and seem ill-adapted for use as labrets (*cf.* Uhle, *l.c.*, Plate XIX, 23, 24.)

FIG. III.



a. Cayambe 1⅝.
b. Otovalo. 1 $\frac{15}{16}$.
c. Otovalo. 1½.
d. Cayambe. 1⅝.
e. Carranqui. 1⅛.
f. Cayambe 1 $\frac{11}{16}$.
g. Cayambe. 1¼.
h. Riobamba. 1 $\frac{15}{16}$.
j. Cayambe. $\frac{7}{8}$.
k. Otovalo 1½.
l. Otovalo. 1 $\frac{7}{16}$.
m
n. Quito. 1¾.
o. Near Riobamba. 1¾.
p. Near Riobamba. 1½.
q. Penipe. 1½.
r. Otovalo. 1.
s. Carranqui. 1 $\frac{1}{16}$.

(The numbers following the names indicate the length of the objects in inches.)

A nearer resemblance to Mexican or Bolivian labrets occurs in *l*, but then it seems related to *k*, which is perforated, as if meant for suspension. The small animals' heads of different kinds of stone, *o*, *p* (near Riobamba) and *q*. (Penipe), are supposed by Dr. Uhle[1] to have been pegs or hooks for spear-throwers. This opinion

[1] "Int. Archiv fur Ethnographie, 1888," vol. i, pp. 207-209.

is not shared by Restrepo[1] who thinks that they may have been burnishers or polishers. It is easier to raise objections to both these views than to suggest a third. Against the first it may be urged that stone is not so serviceable as bone, which is the common material employed both in ordinary and in ceremonial throwing-sticks on the American Continent; and that these forms do not occur in the gold models of throwing-sticks made by the Chibchas (but see Restrepo, Atlas, Plate XIV, Fig. 34). Against the second it must be pointed out that Mr. Whymper's specimens do not seem to have been actually used for polishing.

Fig. III, *r*, is also unaccounted for. It is bell-shaped, and of grey stone, pierced through the projection at the upper end. The base is flat, and in one side is drilled a conical cavity as shown in the illustration. There is another specimen in the collection, differing in the fact that the drilled cavity is not made on the same side as the perforation and in having a perforation at the base connected with the cavity at the side. A slightly larger stone object of similar shape, and with similar pierced projection, but without any lateral cavity, and hollowed out from the base upwards, does not throw any light on the purpose for which *r* may have been used. Mr. Whymper[2] says that this purpose may have been the sharpening of tools: but it would perhaps be difficult to point to an analogous instance.

Fig. III, *s*, a small hand of green stone resembling serpentine was probably some kind of charm: a second specimen is fitted with a silver mount at the wrist, and a third has a rectangle incised on the back. These objects have rather a modern appearance; but there is in the British Museum a similar hand made of white bone, which was found in a tomb at Arequipa, Peru.

The pottery in the collection is represented by a number of typical pieces, chiefly interesting in as far as their form betrays the influence of different cultures. Thus Fig. IV, *d* and *e*, of red pottery, and with circular bases, are not of a Peruvian type, but commonly occur in Colombia and Central America. The same can be said of the tripod vessel *a*, which is entirely blackened by fire. In Ecuador these vessels are usually found at Socabamba, Ibarra, Latacunga, and Riobamba: but similar three-legged pots run through Colombia and Central America to Mexico and even further. Specimens from Chiriqui in the British Museum are closely analogous, having the same characteristically formed legs. Another tripod vessel brought by Mr Whymper has very short, stumpy legs, and would not appear so well adapted for placing directly upon the fire.

Fig. *f*, coarsely made of buff pottery, was found in a grave, with one of the short-legged tripod pots, a vase with pointed base, and a skull,[3] Figs. *b* and *c* represent the southern or Peruvian

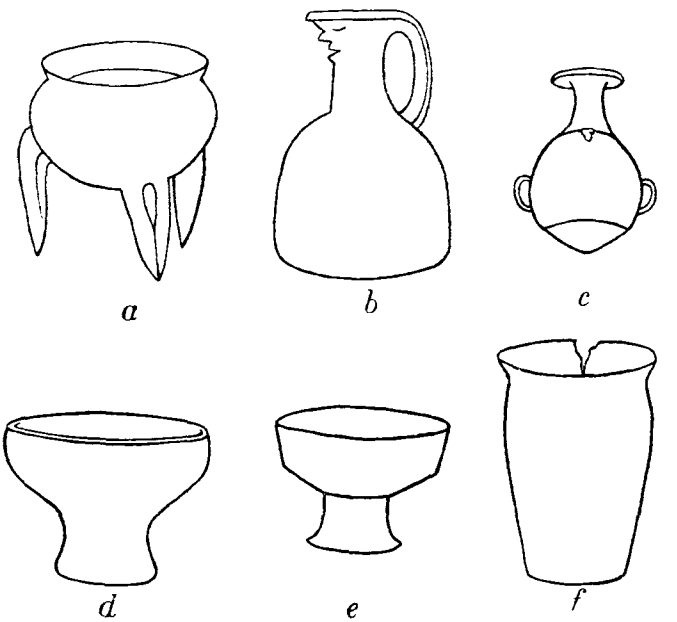
[1] *L.c.*, p. 157, and Atlas, Plate XXXIX, Fig. 115, a. b. c.

[2] "Travels amongst the great Andes of the Equator." London, 1892, page 274.

[3] Whymper, *l.c.*, figure on p. 284.

influence, in contradistinction to the Northern or Colombian. They seem to be Cuzco types.

FIG. IV.



Most of the forms illustrated in Dr. Uhle's admirable coloured plates are represented in the collection, and some of the finer pieces are figured in Mr. Whymper's book. It is to be hoped that further discoveries may throw light on the use of the numerous objects the purpose of which is still problematical.

G. M. DALTON.

Formation de la Nation Française. Par Gabriel de Mortillet. Paris: Alcan, 1897. 8°. 336 pp. Price 6 fr.

This new work of our distinguished honorary fellow M. Mortillet has a very wide scope. In it are discussed all the peoples who, in prehistoric and historic times, have permanently occupied French soil, or influenced the growth of the French nation. The varied problems comprised in this extensive programme are treated in four main divisions under the heads of Historical Documents, Linguistic Deductions, Palethnological Data, and Anthropological Documents. In the first of these divisions separate chapters are devoted to the respective influences of Egyptians, Phœnicians, Carthaginians, Greeks, Ligurians, Iberians, Celts, Gauls and Galatians, Romans, and Teutonic tribes. In the second part

are four chapters devoted to language, inscriptions, etymology, and kindred subjects. In the third part we are taken from the precursors of mankind and Pithecanthropus through the stone ages, to the protohistoric times when metals were in general use. In the fourth, or anthropological, part the evidence of some of the important human remains is considered, among which those of the Neanderthal, Laugerie, and Cro-Magnon naturally play a prominent part. The numerous woodcuts and maps, most of which are well executed, are an attractive feature of the book, which is written with the clearness of style for which French writers have so enviable a reputation. It is impossible to do justice in so short a space to a work which is evidently the result of wide-reaching investigation. We may, however, fitly conclude by subjoining one of M. Mortillet's tables of classification, which will give some idea of the important nature of the work.

CLASSIFICATION PALETHNOLOGIQUE.

TEMPS.		AGES.	PÉRIODES.	ÉPOQUES.
Quaternaires actuels.	Historiques.	du Fer.	Mérovingienne.	Wabenienne. (*Waben, Pas-de-Calais*)
			Romaine.	Champdolienne. (*Champdolent, Seine-et-Oise.*)
				Lugdunienne. (*Lyon, Rhône.*)
	Protohistoriques.		Galatienne.	Beuvraysienne. (*Mont Beuvray, Nièvre*)
				Marnienne. (*Department de le Marne.*)
				Hallstattienne. (*Halistatt, Haute-Autriche*)
		du Bronze.	Tsiganienne.	Larnaudienne. (*Larnaud, Jura.*)
				Morgienne. (*Morges, canton de Vaud, Suisse.*)
	Préhistoriques.	de la Pierre.	Néolithique.	Robenhausienne. (*Robenhausen, Zurich.*)
				Campignyenne. (*Campigny, Seine-Inférieure.*)
				Tardenoisienne. (*Fère-en-Tardenois, Aisne.*)
Quaternaires anciens.			Paléolithique.	Tourassienne. (*La Tourasse, Haute-Garonne*) Ancien Hiatus.
				Magdalénienne. (*La Madeleine, Dordogne.*)
				Solutréenne. (*Solutré, Saône-et-Loire.*)
				Moustérienne (*Le Moustier, Dordogne.*)
				Acheuléenne. (*Saint-Acheul, Somme.*)
				Chelléenne. (*Chelles, Seine-et-Marne*)
Tertiaires.			Éolithique.	Puycournienne. (*Puy-Courny, Cantal.*)
				Thenaysienne. (*Thenay, Loir-et-Cher.*)

MM. Alcan have done their part with their usual excellence. The book forms a volume in the "Bibliothèque Scientifique Internationale."

Life in Early Britain. By Bertram C. A. Windle, D.Sc., M.D., M.A., F.S.A. London: D. Nutt. 1897. 12mo. 244 pp. Published at 3*s.* 6*d.*

We are not aware of any book so well calculated to give a comprehensive view of the various subjects with which it deals in so reasonable a compass as the present admirable little volume. Its aim is to place before the reader in a series of essays a brief but clear account of the different races which inhabited this country from Prehistoric Times up to the Norman Conquest, based on the chief relics which each race has left behind it. This last characteristic it is which lends the book an especial interest and value. School histories and other educational works are most unsatisfactory in their treatment of those unwritten documents in the form of monuments and antiquities in which these islands are so rich. On the other hand professed antiquarian treatises do not and cannot come within the purview of any general educational system. It is to books like Dr. Windle's that we must look if these defects are to be remedied and the interest of the young awakened to the fact that our history can be perceived as well as read, and that the two ways of learning should always be blended together. Following an excellent pedagogical maxim, the author, in his introductory sketch, explains the amount of ground he intends to cover, and the subsequent chapters are devoted to the discussion of Palæolithic Man, Neolithic Man, the Bronze Period, the Roman Occupation, the Saxon Occupation, Tribal and Village Communities, etc. Of these the Bronze Period and the Roman Occupation are perhaps most fully treated. The value of the book is much enhanced by a map of Roman Britain and by some seventy woodcuts. These, and the clear unconstrained style employed by the author, prevent any single section from becoming tedious. There is a valuable appendix giving the principal Ancient Remains in England arranged according to their counties. This is an altogether excellent idea, which should do much to commend the book to masters of higher forms; for these Remains all illustrate objects described in the text.

In a second appendix a List of Authorities is given, and there is a general index.

The Tribes and Castes of the North-Western Provinces and Oudh. By W. Crooke, B.A. 4 vols. (Calcutta, 1896.)

Four stout volumes, making over 2,000 pages altogether, devoted exclusively to the ethnography of a large section of British India, may be said, in the slang of the period, almost to "beat the record." In any case Mr. Crooke's splendid achievement will be placed by students of this vast anthropological field on the shelf side by side with the standard works of Logan, Brian Hodgson, Dalton, Sherring, Risley, and other recognised authorities on the ethnology of Southern Asia. Although he freely acknowledges

his indebtedness to these writers, the work is by no means a mere compilation from such sources, for the information thus brought together is everywhere controlled and largely supplemented by original research, and a great mass of fresh materials, which justify the writer's claim that "this book so far differs from any previous account of the races of these Provinces that it attempts to supply some more detailed information regarding their manners, customs, marriage institutions and religion." (Preface.)

But it differs also in another and a very important respect. The vast body of ethnographic details, which have been collected with much patient study amongst a heterogeneous population of some fifty millions, amid the author's multifarious duties as a District Officer, have been thoroughly sifted, and are here presented to the reader in a form which for systematic arrangement and convenience of reference leaves nothing to be desired. All general questions, that is, such as concern the natives of India as a whole, and independently of their particular tribes or castes, are dealt with in a long introduction of over 200 pages, in which separate chapters are devoted to the difficult problems connected with the "Origin of Caste"; the "Anthropometry" of the aboriginal, Dravidian, Aryan and transitional elements; the "Occupational Form of Caste," in which are discussed Mr. J. C Nesfield's views regarding the functional origin of the Caste System; "Tribal Nomenclature"; "Exogamy"; "Forms of Hindu Marriage." By some oversight, which can easily be rectified in future editions, a Table of Contents has been omitted, so that the student is left to discover for himself the ethnological treasures brought together in this valuable Introduction. It is everywhere interspersed with copious anthropological data thrown into tabular form, the most important being the series of measurements supplied by Surgeon-Captain Drake-Brockman; Mr. E. J. Kitts' supplementary tables reprinted from the "Proceedings of the Anthropological Society of Bombay"; and the averages of Cephalic and Nasal Indices, with accompanying remarks, from Mr. Risley's "Castes and Tribes of Bengal." "No evidence," writes this great authority, "could be more convincing, if anthropometry has any meaning. The Indian races and tribes in the valley of the Ganges from the Afghan frontier to the Bay of Bengal are so absolutely intermingled in blood, that it is impossible to discriminate between the skull characteristic of the castes or functional guilds which have grown up under Brâhmanical usage."

All the rest of Mr. Crooke's work is occupied with a detailed account of the tribes and castes of the North-Western Provinces and Oudh, and it is here that those consulting these volumes will feel specially grateful for the simple arrangement of the materials adhered to throughout. The entries are disposed in alphabetical order, which is clearly indicated by the names printed in large type at the top of the pages, while the longer articles are again disposed in consecutively numbered paragraphs or sections. Thus

any name can be at once found from the brief references in the "Caste Index," where an asterisk shows the castes which are the subject of special articles. This index, which occupies 60 pages, comprises over 4,000 names, which by any other method of arrangement and reference must have filled at least double that space. In the same way the "Subject Index," which, however, might be more copious, is able to give in extremely condensed form all the castes or tribes amongst whom any given custom may prevail, together with the page where each case is specified. Needless to say how greatly the comparative study of social usages, traditions, religious views and the like is facilitated by this plan, by which seven lines, for instance, suffice to give reference to as many as thirty tribes, amongst which various forms of ancestry worship are prevalent.

All the more important articles are further provided with inset marginal headings, which clearly indicate the subjects dealt with. Such are, generally speaking, an explanation, where possible, of the tribal or caste name, the origin, ethnical affinities and geographical range of the tribe, its traditions, habits and customs, superstitions, religious tenets, rites and ceremonies connected with births, deaths and marriages, tribal organisation, subdivisions, population, in a word, just that kind of information that the student of ethnology would expect to find in a work of this sort. Thus, under the entry BIYÂR, BIÂR, we read: "A tribe of labourers and cultivators in the Eastern Districts. 1. The word *Biâr* means a 'seed-bed,' and it is suggested that this may be the origin of the name on account of their occupation, which is principally rice cultivation, and the construction of tanks and embankments. They may possibly be of aboriginal origin, but the tribe appears to be very mixed, and while they have to a great extent lost the broad nose characteristic of the pure Dravidian races, like the Majhwârs or Korwas, they are not noticeably different in appearance from the Chamârs and other menial Hindu castes which surround them. . . The idea which at one time prevailed that they were in some way connected with the great Bhar race, seems groundless. They consider themselves autochthones of Pargana Barhar, in Mirzapur, and have no traditions of emigration. They are slight, dark, wiry men, noted for their skill in earthwork, and habitually employed on excavations of all kinds; a quiet, rather depressed race, occasionally addicted to petty theft. In Mirzapur they have now formed themselves into two endogamous divisions, the Barhariya, who take their name from Pargana Barhar, north of the river Son, and the Dakkhinâha, or 'Southerners,' who live south of the river," and so on for 12 pages, concluding with a table of their distribution and population according to the Census of 1891.

There is only one important point to which one might feel disposed to object, and that is the extended use of the ethnical term "Dravidian" in this and many other passages, as for instance in the article BHIL: "There can be little doubt that they [the

Bhîls] are a branch of the great Dravidian race which is found along the mountains of Central India, and are akin to the Gonds, Kharwârs, Mânjhis, Cheros, and Santâls, who live farther to the eastward." But none of the peoples here mentioned, the Gonds alone excepted, appear to be of Dravidian speech. Those that have not been Hinduized speak various forms of the Kolarian stock language, which differs fundamentally both from Dravidian and from Aryan (Sanskrit), and which consequently implies the presence in Central India of an autochthonous element distinct both from the Aryan and from the Dravidian. But Mr. Crooke nowhere takes account of this element, which is in fact absorbed in his "Dravidian," this term being thus practically extended to all the aborigines of non-Aryan descent. He quotes, and presumably accepts, Captain Drake-Brockman's general classification of the natives "under three main divisions, viz., *Aryan*, *Medium* and *Dravidian*: the Medium group of which contains a large number of castes which form, more or less, an intermediate type, and are not capable of being classified strictly under either of the other two main groups. The last group I have again sub-divided into two—(*a*) an Hinduized, and (*b*) an *Aboriginal* section" (Introduction, xxvii). Dravidian thus becomes equivalent to "Aboriginal," an arrangement which, as stated, completely ignores the Kolarian element, not to speak of a possible and even probable Negrito substratum.

Captain Drake-Brockman is naturally much impressed by the remarkable uniformity of physical characters presented by the anthropometric tables of his three divisions, and he considers that this uniformity "tends to prove beyond doubt that the racial origin of all must have been similar, and that the foundation upon which the whole caste system in India is based is that of function and not upon any real or appreciable difference of blood" (p. xxxiii). In other words Aryans, Dravidians, and all other natives must have had a common origin, because of their present physical resemblances, and despite of their radically distinct forms of speech. Surely such an inference is not warranted. The languages are there and cannot be explained away, the less so that some (Sanskrit) are known to be of relatively recent introduction, and must therefore have come in with later immigrants long after the Peninsula had been occupied by other and more primitive peoples of different origin. But the present uniformity of type may very well be explained, partly by convergence due to the persistent influence of a common environment, and still more by the secular interminglings of originally distinct physical stocks. In my "Ethnology" (Chaps. vii and ix) I have endeavoured to show how such apparent antagonism between anthropology and philology may in most cases be reconciled without neglecting either factor in the complex physical and mental constitution of man.

It remains to be stated that the value of this monumental work is considerably enhanced by a considerable number of illustrations,

which "are reproductions of photographs taken at Mirzapur by Sergeant Wallace, R.E., of the Rurki College."

A. H. KEANE.

"The Australasian Anthropological Journal," in the May No. 1897, contains, amongst other articles, "Anthropometry as applied to build up a Powerful Nation"; "Chronology of Egypt from Early to Late Times"; "Dialects of Australia," by Messrs. Fraser, Suttor, etc.: "Ethnology of the Australian Blacks"; "Medical Treatment and Witchcraft of Australian Blacks." Mr. Fawcett's three papers—"Burial Ceremonies of Waw—Wyper Tribe"; "A Tradition of the Australian Aborigines"; "Questions regarding the Morioris"; "The Earliest Builders."

"The American Anthropologist," in the first four Nos. for 1897, contains amongst other articles—"Tusayan Totemic Signatures" (illustrated), by J. W. Fewkes; "Tell-et-Tin on Lake Homs, in the valley of the Orontes," translated by J. M. Casanowicz; "Scarred Skulls from Florida," by F. H. Cushing; "The Hopi in relation to their Plant Environment," by Walter Hough; "Stone Images from Tarascan Territory, Mexico" (illustrated), by Frederick Starr; "Death Masks of Ancient American Pottery" (illustrated), by F. S. Dellenbaught; "The Language used in talking of Domestic Animals," by H. C. Bolton (concluded in No. 4); "Primitive Rope Making in Mexico," by W. J. McGee.

"Revue Mensuelle de L'Ecole d'Anthropologie de Paris," in Nos. VI and VII, for 1897, contains:—L. Capitan.—"Les Maladies Par Ralentissement, de la Nutrition," "L'Arthristisme (Cours d'anthropologie pathologique)"; A. Lefèvre—"Mars, Dieu Du Printemps, de l'orage et de la fécondité"; P.-G. Mahoudeau—"Le Principe du Transformisme"; L. Capitan—"La Station de la Vignette."

THE JOURNAL

OF THE

ANTHROPOLOGICAL INSTITUTE

OF

GREAT BRITAIN AND IRELAND.

MAY 11TH, 1897.

E. W. BRABROOK, Esq., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The following communication was read by the author, with lantern demonstration:—

"The Anthropological Features of the External Ear." By A. KEITH, Esq., M.D.

Dr. GARSON, Professor THANE, Messrs. HOLMES, TIMS and LEWIS took part in the discussion, and a vote of thanks to the author was passed.

On COMPLEXIONAL DIFFERENCES *between the* IRISH *with* INDIGENOUS *and* EXOTIC SURNAMES *respectively.* By JOHN BEDDOE, M.D., LL.D., F.R.S.

THOUGH Grattan and Sir William Wilde began long ago the investigation of the physical characters of the Irish, but little has been done since in that direction until quite lately, when Professor Haddon and Dr. Browne have produced two very interesting monographs on the inhabitants of some of the islands off the western coast, Aranmore, Inisbofin and Inisshark. One of the points they bring out is the comparative lightness of the iris, whereas the hair, especially in the latter islands, is generally dark. In fact, this prevalence of the combination of dark hair with light eyes is, as is generally known, an Irish characteristic. It occurs, however, almost as conspicuously in the Scottish Highlands and in a less degree in some parts of Wales, such as the hundred of Cemmes in Pembrokeshire, in parts of the West of England, as Exmoor and South Devon, in Bretagne and elsewhere. The combination is decidedly uncommon in Germany, at least among the true Germans, but comes into comparative prominence as one proceeds eastwards, with the increasing prevalence of the Slavonic element. It will hardly do, therefore, to accept without question the interpretation of it which at once suggests itself, viz, that the light iris is the result of natural selection in a climate where there is no need of much pigment to protect the retina from overmuch or overbright sunshine. Whatever its origin, it has now become a race-character.

It has occurred to me that it may be of interest to enquire how far it is common to both the two great sections of the Irish people I will call these, for the sake of brevity, indigenous and exotic respectively; these names are convenient, and though their correctness may easily be impugned, they are every way better than those of Celt and Saxon, which are too commonly employed.

By indigenous I should mean, if it were possible to separate them, the descendants of the people who were at home in Ireland, before the days of Thorgils, and Olaf, and Sigtryg Silkbeard and Magnus Barefoot, and by Exotics the Danes, Norwegians, English, Welsh, Scotch, Huguenots and Palatines who have settled there at various times subsequently. I shall not now enquire how far these indigenæ were the descendants of early or late invaders, whether it was to Iberians or Atlanteans, or to Gael, that they owed in the main the type or types which they

have transmitted to our own times. I will merely say that their ancient poems indicate a diversity of colour among them, that the admiration for fair hair would lead one to think that it had been common in the latest conquering tribe, and that amalgamation was far from complete, while the attribution of blue eyes and black hair to the handsome Diarmaid shows that that combination existed, was known and admired.

Later on, in the middle ages, it is curious that we have, so far as I know, no evidence as to the prevailing complexion of the Irish. Mac Firbis's oft-quoted description of the three elements of the indigenæ, the dark Firbolgs, the blond Tuatha Dé, the Milesians white of skin, brown of hair, only gives us to understand that all these varieties existed, as they did and indeed do almost everywhere in Europe. There is indeed a story (but I have forgotten whence it comes) of some one meeting with people in a skin-boat off the western coast, who "had long yellow hair, *like the Irish*." Giraldus, who knew both the Welsh and the Irish, and who lets us know that the former were of dark complexion, has nothing to say about the Irish from that point of view. All we know is that the native Irish were tall and strong, and swift of foot, and some say also comely.

Dr. Morton, the great American anthropologist, describing the Irish type as known to him, said "eyes and hair light." It is probable that in his day the Irish emigrants to America came in larger proportion from the eastern parts of Ireland: moreover Morton was a student of the dark native American races more especially. In Baxter's great work on the military statistics of the American war, the order of complexion is as follows, going from the fairest to the darkest—Englishmen, Irishmen, Germans, United States men, British Americans, *i.e.*, Canadians, etc. The Anthropometric Committee of the British Association, owing, in my opinion, to the unfortunate adoption of an artificial method of classification, ascribe to Ireland more of light hair, and less of red and dark hair, than they do to either England, Wales or Scotland. My own observations, extending to about 10,000 persons, show almost everywhere a great preponderance of light eyes, and in most parts of dark hair, the exceptions being in some cases explicable by the probable presence of a large exotic element.

I have said that I would like to make a comparison of the two elements, the exotic and the indigenous, in order to find out whether the former has taken on anything of this notable combination of colour. But of course such a comparison is not really practicable. There has been constant intermixture of blood between the two, during all this period of a thousand years; still, the amalgamation is very far from being complete.

I published, in my "Races of Britain," the figures for the upper and lower classes respectively of Dublin and Cork: the difference between them is considerable, but may not be altogether an affair of race.

What we really can do is to institute a comparison between the bearers of indigenous and those of exotic surnames. Of course the utmost one would be entitled to assert of the latter is that they have some exotic blood in their ancestry, whereas there is no evidence that the others have any such admixture. Even that would be too much to assert in every case, as we know that some Irishmen, especially within the pale, did adopt, in accordance with the law, surnames of English form. Still, I am disposed to think too much has been made of this, though such names as Fox and Harrington are said to owe their frequency to this kind of translation.

I have given a wide extent, in making the division, to the limits of the exotic class, including in it such names as MacAuliffe and Cottar, (= McOtter) together with those patronymics in Mac which are undoubtedly and exclusively Scotch, though of course a good case might be made for placing them otherwise, on the ground of race. With these come also the Anglo-Norman surnames, such as Fitzgerald and Power, though it may very well be that some bearers of these names are simply descended from Celtic clansmen of these families. A few doubtful or inscrutable names I have put aside altogether.

I have taken my material from several different years of the files of the "Police Gazette," in which are published nominal lists of deserters from the army, navy and marines. The medical officers of the recruiting staff differ of course in their appreciation of colour, like the rest of us; but as they do not hold office more than five years, it is easy to arrange the personal equation by taking several years at some distance of time from each other. The alleged birthplace is given in every case; and I take all the natives of Ireland of twenty years of age and upwards, and divide them into the two categories. The indigenous are more numerous than the exotic in the proportion of about five to three: in Ireland generally I think the proportion would be a little larger, as enlistment goes on more freely in some districts such as Dublin, Belfast and Cork, where exotic surnames, and probably exotic strains of blood, more abound.

Observation of Eyes and Hair.

It may be well to say something about methods of observation. With regard to the hair, there is on the whole more disagreement than as to the eyes, though one might have expected it to be otherwise. The recruiting officers use much the same divisions

as I do, and which Topinard has adopted—red, fair or light, brown (also called chestnut, neutral or medium), dark brown and black. Different observers give very different values to these terms, but by taking several years, the number of observers being thus very large, a sort of average is obtained. I find that my own index of nigrescence is a little higher than this average would give, for in hasty observations one naturally extends too widely the limits of the black and dark brown classes.

There are two methods of observing iris-colour, and several of classifying the results. The eye may be inspected closely and minutely, as Bertillon does for purposes of identification, so that the strie and central areola are distinctly seen. This almost necessitates an elaborate classification, as intermediate and mixed hues, neither blue nor light grey nor brown, appear very numerous and varied. The other plan is to regard the eye from a distance of three feet at least, and register the general shade of the iris, whether light, neutral or medium, or dark. Topinard improves on this, my original plan, by dividing the light eyes into blue and not blue, so as to give a point of comparison with Virchow's division into blue, grey, and brown. Virchow's grey is probably equivalent to Topinard's medium plus his light-not-blue.

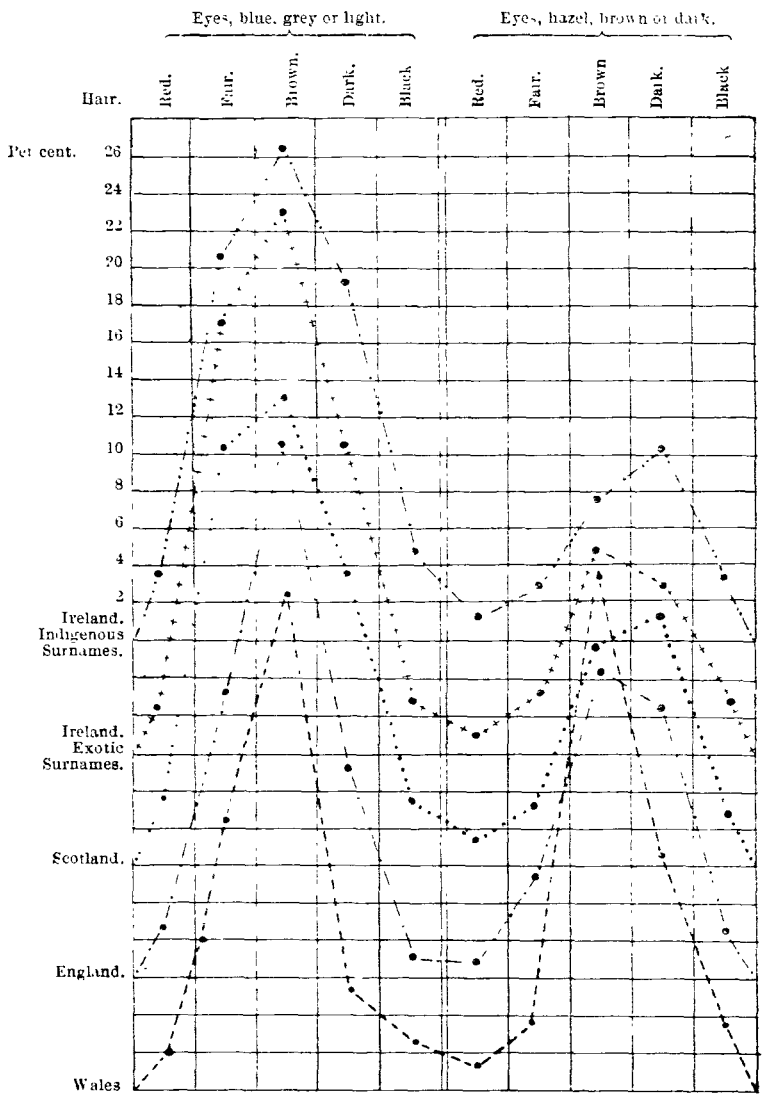
Our recruiting officers follow the second and easier plan. They seldom use any terms except blue, grey, light, hazel, brown, and dark. The first three fall naturally to be classed as light, the last three as dark, thus getting rid of the difficulty that some folk's blues are other folk's greys. The greens, dark greys, hazel greys, etc., which Topinard and I call medium-mixed or neutral, are divided summarily between the classes: many of them are called grey, some no doubt are called hazel, for not everybody grasps the obvious fact that hazel means a clear warm brown, like that of a nutshell. Hazel, by the way, is a rare colour in most parts of Ireland. On the whole, the recruiting results, thus classified, run very uniformly, English returns giving usually somewhere about 40 per cent. of dark eyes, Irish ones below 30, Scotch about 30, and the North of England a less proportion than the South.

I have tabulated the colours of 1,250 natives of Ireland bearing indigenous names, and 800 bearing exotic ones. The results are in the accompanying table.

They are not exactly what might have been anticipated. They are not, that is to say, what ought to result, in the case of the exotics, from the union of an equal proportion of indigenæ and of mixed Englishmen and Scotchmen, or indeed from any mixture of that sort, whatever the proportions. The exotics come out altogether too light-complexioned. Their index of

COLOUR OF EYES AND HAIR, FROM ARMY, NAVY AND MILITIA REPORTS.

Natives of	Number.	Sex.	Light Eyes. Hair. Red.	Fair.	Brown.	Dark.	Black.	Total.	Dark Eyes. Hair. Red.	Fair.	Brown.	Dark.	Black.	Total.	Totals of Hair. Red.	Fair.	Brown	Dark.	Black.	Index of Nigrescence.
Ireland—																				
Indigenous names ..	1250	m	3·6	20·6	26·4	19·3	1·5	71·4	1·3	2·9	7·9	10·2	3·1	25·4	4·9	23·5	34·3	29·5	7·6	16·3
Exotic names ..	800	m	2·1	22·9	29·1	16·2	2·8	73·1	1·4	3·4	10·2	8·7	2·7	26·4	3·8	26·3	39·3	21·9	5·5	5·8
Scotland	1000	m	3·5	22·2	25·	15·8	3·4	68·2	1·2	3	11·8	13·2	2·6	31·8	4·7	25·2	36·8	29	6	7·7
England and Wales ..	1000	m	2·6	17	28·5	11·2	1	60·3	·9	5·6	16·5	14·3	2·6	39·7	3·5	22·6	45	25·5	3·6	6·6


Eyes, blue, grey or light.
Eyes, hazel, brown or dark.
Hair.
Red.
Fair.
Brown.
Dark.
Black.
Red.
Fair.
Brown
Dark.
Black
Per cent.
26
24
22
20
18
16
14
12
10
8
6
4
2
Ireland. Indigenous Surnames.
Ireland. Exotic Surnames.
Scotland.
England.
Wales

nigrescence is not only much lower than that of the dark indigenæ, but somewhat lower than that of either the Scots or the English. The influence of the Scottish element may be shown, perhaps, to some extent in the frequency of light hair, and that of the English in the reduced frequency of the combination of light eyes and dark hair, and the increase of the converse one of dark eyes and light hair. But on the whole the most striking result is that the descendants of the colonists, with an Irish cross, have acquired the light eyes proper to the country, but not the dark hair.

More than one possible explanation of this fact occurs to me, but I will put forward but one of them. It is this, that in the crossing of different types a certain condition of instability is produced, which allows an opportunity for the play of those influences of media which are powerless, unless through the influence of natural selection, to affect established breeds. The climate of Ireland, speaking roughly, is comparatively cool, damp, and sunless. These are precisely the climatic conditions which are supposed to be favourable to blonds. But whereas the original Atlantean Irishman was dark, his descendants have remained so, in spite of climatic influences, until those influences have had freer play allowed them through crossing with alien blood, Gaelatic, Scandinavian, or Saxon.

Copper *and* Bronze *in* Cyprus *and* South-East Europe.

By J. L. Myres, M.A., F.S.A., F.R.G.S.

[with plate xi.]

The moment of the introduction of metallurgy is, in the history of any civilisation, a crisis second only in importance to the introduction of fire. It is consequently a question of fundamental importance in the study of mankind in Europe, how, when, and whence copper, bronze, and iron first came into common use.

Obviously the first question is to determine *where* copper is found within the limits, and in the immediate neighbourhood of Europe? And for our present purpose it is enough to note that Britain, possibly Scandinavia, Spain, Central Germany, and Austria-Hungary, the Urals, Greece (especially Chalcis in Eubœa), Cilicia, and Sinai, are, besides Cyprus, the only sources which need be considered; and that of these the first three, and the Russian and Greek areas, may be safely discarded as derivative.

The Bronze Age strictly must now be divided, almost wherever it can be discussed at all, into the age of pure, or nearly pure copper, and the subsequent age of copper united with tin in a tougher and more serviceable alloy.

This brings up of course the whole tin question, which goes beyond the limits of the present inquiry; it is enough to note that tin is found in the neighbourhood of copper in Britain, Spain, and parts of the Central European area; and that it is *not* found in Cilicia, Cyprus, in Sinai, or Mesopotamia.

The older statements that there is tin in Crete are anticipations, by three centuries, of discoveries which still remain to be made.

The purpose of this paper is to examine the question whether Cyprus, which probably from the time of the XIIth, and certainly from that of the XVIIIth Egyptian Dynasty, to the collapse of the Roman Empire, supplied the coasts of the Levant with copper almost to the exclusion of any other supply, and gave its name to the metal in the Roman and so in the modern world; may not have even been the first centre of copper working within the area in question; may not, that is, have imparted to Asia and to Europe, if not also to Northern Africa, the first knowledge of the first metallurgy.

We should note, to begin with, that in Cyprus, where the rich copper ores lie near and even on the surface; where until

Roman times at least the interior was densely forested; and where, as everywhere in the Levant, forest fires are of annual occurrence and great intensity, we have a very likely area for the accidental reduction of the metal in the manner suggested of old by Lucretius.

Also, that in the absence of native copper, smelting of some kind must have been resorted to from the beginning: and that in fact all the early Cypriote weapons, and all which come here under review, have been cast in a mould; though they have often been hardened by subsequent hammering.

The evidence which seems to lead to the conclusion that the Cypriote copper was the first worked in the Mediterranean area is of several kinds.

Firstly. The Stone Age is apparently not represented in Cyprus as a distinct period of long duration. Only one instance has occurred hitherto in which the date of an implement can be ascertained from the objects which accompany it, and in this instance the circumstances indicate a late period of the Bronze Age. The second of the five instances which are known,[1] comes from the same neighbourhood, and so far as the inadequate record of the discovery goes, probably from the same necropolis. The other two finds were both of casual occurrence. Further there is nothing to show that the two Neolithic implements already cited are of distinctly late or abnormal type.

We may, therefore, infer that the Copper Age in Cyprus was in part, at least, contemporary with the later Stone Age elsewhere. On the other hand the copper celts of Cyprus long retain the quite primitive unflanged form,[2] which is certainly suggested by a Neolithic prototype. This looks as if they had long co-existed with Neolithic celts elsewhere: and consequently as if no commercial incentive had existed to modify and perfect their form.

Here comes in a further piece of evidence, namely, a polished celt[3] in the Ashmolean Museum (probably from Melos), the general form, the flat sides, and nearly rectangular cross section of which seem to indicate that it has been definitely fashioned in imitation of a copper celt of the Cypriote type.

Secondly. The Cypriote types of celt and dagger blade certainly determine the types which prevail on the Syrian coast down to the Mykenæan Age, and, not improbably, even later. Further, the excavations of Dr. Bliss at Tell-el-Hesy[4] in the Philistine country, and of Dr. von Luschan at Sinjirli in North Syria have established the fact that the Syrian coast is very largely indebted to Cyprus, within the same early limits, for

[1] "Cyprus Museum Catalogue," 1897, p. 13. [2] Plate XI, 1.
[3] Plate XI. 2. [4] Plate XI, 3.

much of its fine pottery. Several classes of vases, in fact which may now be stated with certainty to be Cypriote, are found not infrequently on the mainland sites. And if such articles of luxury were being exported from Cyprus, *à fortiori* the copper, which abounds in Cyprus, and is, apparently, absent on the mainland opposite, must have been exported: in fact, the trade in copper probably determined the trade in vases.

Nor is this class of evidence confined to the Syrian coast. Cypriote vases have been found exported to Egypt, and are represented also by casual finds in the Cyrenaica, in the island of Thera, and in South Italy;[1] and by dated groups at Athens, and at Hissarlik. These dated groups all belong, it is true, to the *later* Bronze Age, though that from Thera is almost certainly pre-Mykenæan.

With regard to Egypt the dated evidence takes us rather further back. I have found at Kalopsida[2] in Cypriote Bronze Age tombs of not very early date, and associated with copper implements of not very early type, a most characteristic class of small black clay vases with punctured ornament, which are well-known in Egypt on the sites of foreign settlements of XIIth Dynasty date, but disappear wholly before the foreign settlements under the XVIIIth Dynasty.

This find seems to carry back the existence of copper working in Cyprus and the probability of copper exportation from Cyprus, at least as far as the twentieth century B.C. (on the current Egyptian reckoning) and the inference is confirmed by the fact that all the native porcelain beads of Cyprus at Kalopsída, Agia Paraskevi and on other sites, are imitations of a characteristic XIIth Dynasty fabric, even if they are not themselves, in some cases, of Egyptian manufacture.

Thirdly. The collateral argument from the pottery may be carried a stage further back, though not exactly in the same form. The characteristic forms of the earliest pottery in Cyprus are mainly derived from gourd vessels,[3] and the mellow colour of a well-used gourd is imitated by a slip of bright red clay, hand-polished to a lustrous surface: the characteristic ornament, again adapted from that of gourds, consists of varied groups of incised lines, and these lines were emphasised and preserved by filling them with a white chalky substance: often with gypsum, which is very common and accessible in the parts of Cyprus where these fabrics are found.

This polished red ware[4] is found in all the Bronze Age sites in Cyprus, except in one or two, which are rude and perhaps really

[1] "Cyprus Museum Catalogue," pp. 19, 37, 39.
[2] "Journal of Hellenic Studies," xvii. pp. 138-147.
[3] Ohnefalsch-Richter, "Kypros," Plates XXXIV-V. [4] Plate XI. 4.

Neolithic, though no stone implements have been found on them as yet; it comes to perfection almost at one step, and passes through a long period of magnificence to an even longer period of decadence; and its offshoots exist even at the present day.

In Cyprus this pottery antedates the actual appearance of copper and *may* of course have nothing whatever to do with it; also, as it is very fragile, it is not likely that it was ever exported wholesale; nor are specimens of it known from abroad.

It is therefore most noteworthy that at Hissarlik, where the lowest stratum contains only black glazed pottery, and only very rare copper implements (and of these some are of late forms and are almost certainly admixtures from higher strata), there comes in, in the second stratum, and associated with numerous copper weapons of Cypriote type, a polished red ware with incised and white filled ornament;[1] its forms, however, are imitated only partly from Cypriote forms and partly from the native forms of the first stratum: in particular they lose sight by degrees of their gourd prototypes, just as one would expect if our hypothesis be valid, and they have really nearly reached the border of gourd-land. In the same way, and presumably for the same reason, the ornament is distinctly poorer in conception and in execution, and is contaminated with local and non-Cypriote motives.

A similar red fabric of pottery is found on pre-Mykenæan sites in Crete and Thera, at Athens and other places in Greece, as well as in pre-Mykenæan Malta and Sicily; and can be traced beyond the Dardanelles, and as far as Hungary and Transylvania, and a last reminiscence of it even in the Swiss lake dwellings. And the incised and white filled ornament has been long and fully recognized as characteristic of the pottery of the earliest Bronze Age in Central Europe.[2]

So far as I am aware, however, no actually Cypriote specimens of the red polished ware have been detected either at Hissarlik or in Europe. This may be because they have not been looked for, but the case is all the stronger if they are absent.

The coincidence of motive is so close—amounting as it does to practical identity—that independent invention is really out of the question, especially where there is so strong an *à priori* case for communication one way or the other between the two areas. And the incomparable superiority of the Cypriote work, coupled with its closer adherence to the archetypal gourd forms, makes it practically certain that the fabric and its motives were propagated from Cyprus north-westwards.

[1] Plate XI. 5. [2] Plate XI, 6.

But pots so fragile can hardly have been the sole object (even if they were the object at all) of commerce over such distances, especially considering the very *local* character of all early pottery: for the case of the red polished ware, which is a domestic fabric both in Cyprus and Hissarlik II–III, is quite different from that of the leather-type vases already mentioned as probably Cypriote and as found on the coasts of the Levant.

But if the pots themselves were not exported, the knowledge of them must have travelled by other means. The only other means conceivable is that commerce existed between Cyprus and Hissarlik, and so with South-east Europe. And the only conceivable object of commerce is the copper, the staple product of Cyprus, and the preparation of which presumes so close an acquaintance with the manipulation of clay.

We may compare the close association of nascent bronze industry at a later stage with nascent ceramic at Chalcis, at Corinth, and in Etruria.

Fourthly. Further evidence arises from the forms of the implements themselves. The Cypriote forms remain few and simple, the celts in particular showing very little change throughout the series. It is true that ruder and more stone celt-like implements are occasionally found on European, especially on Danubian sites, than any specimens from Cyprus, but they are not therefore necessarily prior in time to the Cypriote forms.

The fact, that the Cypriote forms develop so little, may on the other hand be very well due to the abundance of the metal and to the scarcity of tin, without which the tougher alloy cannot be made, which permits of the slighter built and more elaborate forms of the North. The total absence in fact of these more elaborate forms, and the late date at which tin-bronze becomes common in Cyprus, is strongly against any hypothesis that Cyprus was indebted to the North for its knowledge of copper.

Compare also with the absence of Northern types, and the late arrival of tin, the late arrival of amber in Cyprus. It does not appear until the end of the Mykenæan Age, and is usually associated with glass beads of types which are common or indigenous in Italy, and at the head of the Adriatic. The earliest example is found in a very late Mykenæan tomb (*Salamis (Enkomi)*, 1896, 27, amber bead, Cyprus Museum Cat. p. 184, *cf.* 139).

Meanwhile, Cyprus does show rare examples of intermediate steps *towards* European forms, which appear to be wanting in the North. The prototype of the hammer-adze is represented by an ordinary flat celt, with an oval hole punched through the

hinder end,[1] and the double adze and axe-and-adze compound types by two such implements welded together.[2] Here the superposition of the two halves explains the dislocated position of the two blades which is found in the European examples, though the latter are usually cast in one piece.

The introduction of copper into Europe was closely followed by the establishment of independent copper fabrics; which like the Cypriote go back to Neolithic prototypes, and are themselves imitated in stone.

Though these are properly bounded to the southward by the Balkan barrier, specimens of them are sporadically found further south: for example, an axe-and-adze of Danubian type now in the Ashmolean Museum,[3] bought at Phigalia, and so strange to classical archæology as to be reckoned mediæval by its discoverer. Such implements occur rarely at Hissarlik, but have not been traced further south on the Asiatic side.

That the communication between Cyprus and Hissarlik was overland is indicated, in default of better, by three pieces of indirect evidence.

(1) If the communication had been by sea, Cypriote types would have been spread over the Ægean and over Greece. The imperfect state of the evidence does not permit of a definite statement; but so far as I am aware, Cypriote types of implements do not occur in the Upper Ægean, where on the other hand Neolithic implements are comparatively frequent.

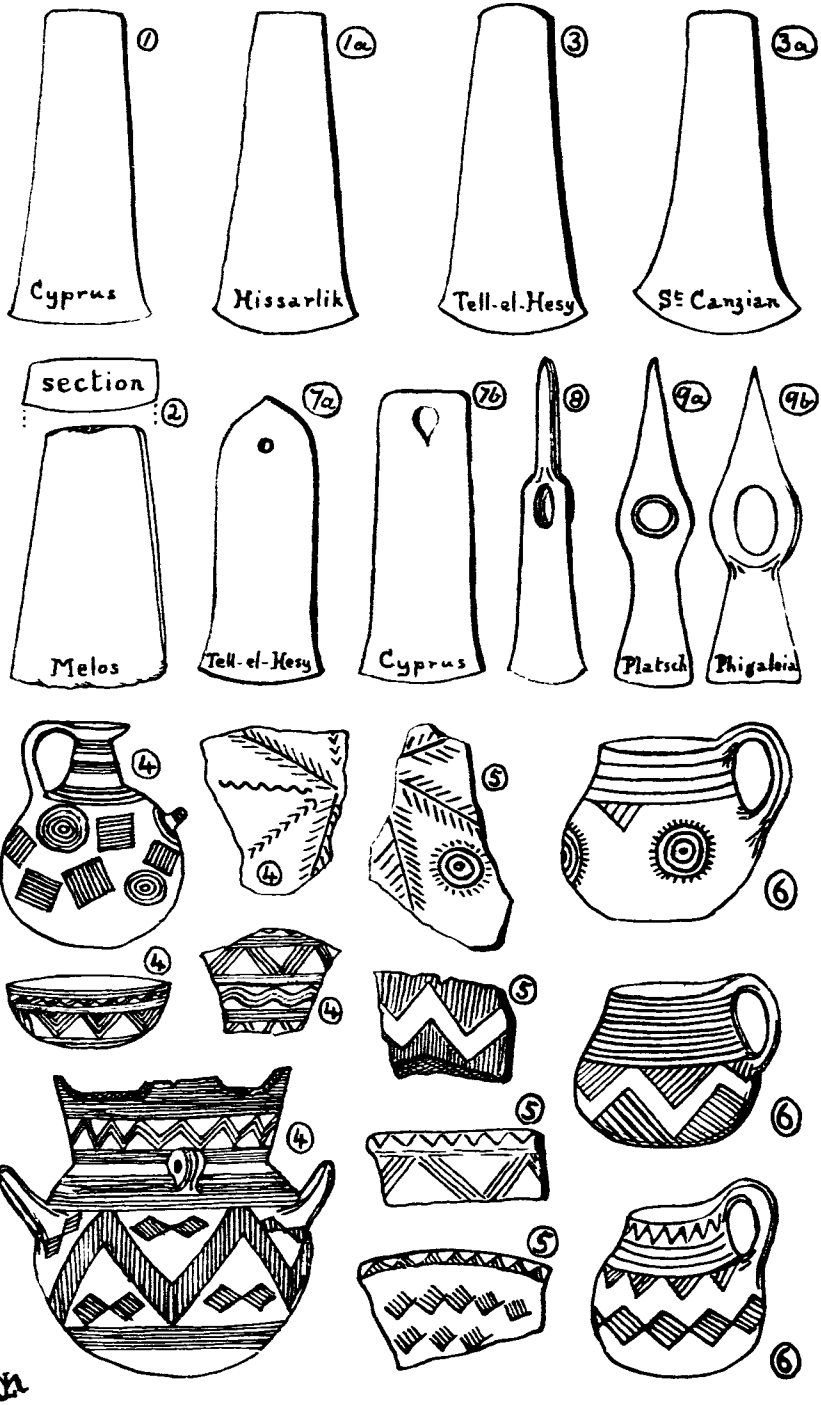
The Melian stone-celt, and the pre-Mykenæan copper implements of Amorgos indicate some connection further south: but in Amorgos the types are all secondary, and have developed along a distinct line, shared by those of Crete.

They are also apparently of much later date: for they are more elaborate and specialised in form and are associated with *painted* pottery with naturalistic and curvelinear ornament. The Mykenæan bronze implements are either derived from the Amorgine, or more akin to northern bronze types: while Crete borrows adzes independently from Egyptian—probably Sinaitic—forms of the XIIth dynasty and onwards.

(2) If Cyprus had reached the Dardanelles by sea, nothing need have passed by Hissarlik at all—whereas the whole *raison d'etre* of Hissarlik is as a station commanding the Dardanelles ferry; and combining in its peculiar type of civilisation elements borrowed almost impartially from Europe and from Asia. This alone explains the mixture of Cypriote and Danubian forms of pottery and of implements, and also the large proportion of *bronze* implements among the copper ones.

(3) We have a really historical, though unfortunately undated

[1] Plate XI, 7. [2] Plate XI, 8. [3] Plate XI, 9.


1
Cyprus
1a
Hissarlik
3
Tell-el-Hesy
3a
St Canzian
section
2
Melos
7a
Tell-el-Hesy
7b
Cyprus
8
9a
Platsch
9b
Phigaleia
4
4
4
4
4
5
5
5
5
6
6
6

reference to the existence of this land route, at least as early as Mykenæan times, in the Catalogue of Trojan allies in the Second Book of the "Iliad."

They are arranged in three series, each in geographical order radiating outwards from Troy. The first, after giving the immediate neighbours of Troy in the Troad, passes into Europe by Lesbos and Abydos, and traverses in turn the Pelasgians, the Kikones, the Thracians, and the Paeonians; that is, it follows the straight road along the north shore of the Ægean Sea; thence through Upper Macedon, into the Morawa Valley: and so to the Danube.

The second, starting westwards and omitting Bithynia which represents the Thracian incursions of the eighth century, passes through Paphlagonia and ends in Armenia and Pontus: 'from afar out of Alybè, where is the birthplace of silver.'[1] Compare with this hint, as helping to fix the date, the wealth of silver plate in the Great Treasure at Hissarlik.

The third passes southward, *viâ* Mysia. Mæonia (that is Lydia) Karia, and ends in Lykia. We can hardly doubt that it went further; skirting the central plateau of Asia Minor through Pisidia and through Cilicia, and that its goal was Cyprus, the copper island.

[1] Hom. 'Il.' ii. 857.

Textile Impressions on an Early Clay Vessel from Amorgos.

By John L. Myres, M.A., F.S.A., F.R.G.S.

[with plate xii.]

The fragment of pottery which is the subject of this note and of Plate XII was picked up by me in the summer of 1893, together with a number of others of no special interest, on the surface of the site of a Bronze Age settlement which lies on the north side of the Harbour Bay in the Greek island of Amorgos, and a few minutes' walk from the sea. The site is known as τζὴ βίγλαις (pronounced *tze Vígles*), and is mentioned, among a number of other Bronze Age sites, by Dr. P. Dümmler,[1] who visited Amorgos and excavated there in 1886.

The site consists of a low mound rising in an uneven cornfield and only just too prominent to have escaped being wholly ploughed down. Indeed, its lower part has been a good deal degraded, leaving the summit rather steeper than it might otherwise have been. All over the undisturbed parts traces of very rude dry-stone walls are visible, of the same character as those on the conspicuous hill on the south side of the bay above the modern harbour village, and elsewhere in the island.

The whole site is strewn with fragments of pottery, all, so far as I could see, of the same local clay, and of very coarse hand-made fabric, usually covered with a dark red, lustrous slip of rather finer clay, which shows distinct signs of hand-polishing, but without further ornament. Dr. Dümmler has described a number of examples from the Bronze Age tombs of Amorgos of pottery of light-coloured clay with ornaments in lustreless umber paint; but I found no fragments of this kind at τζὴ βίγλαις.

The fragment reproduced in Plate XII formed part of the base and the lower part of the side of a large, capacious vessel of coarse clay, full of fragments of micaceous schist, calcined felspar, and other minerals.

The clay is burnt to a bright brick-red, slightly paler in the centre: the layer of slip is thin, fine, and of a rather darker red; the base and walls of the vessel are from $\frac{3}{8}$ inch to $\frac{5}{8}$ inch thick (·010—·015 m.).

The sides join the base outside at a distinct angle of about 125°, but pass into it by a gentle curve internally; the base

[1] Mitth. d. K. Deutschen Institut's (Athenische Abtheilung) xi. (1886).

appears, on a cross fracture, to have been laid down as a flat cake first, and the sides to have been built up upon this.

The remarkable feature is that the base bears the clear impression externally of a rush mat, upon which the vessel has been formed. The mat is of simple construction: from a confused knot in the centre emerges a radial "warp," so to speak, of rushes in pairs: the "woof," also of pairs of rushes, is woven round and round the centre in simple alternating texture. The rushes of the warp have not kept their strictly radial position in the parts further from the centre, but have been drawn to the right (left on the impression), showing that, either in the weaving or subsequently, a wrench or circumferential strain has been applied to the mat, in the direction of the hands of a watch. The mat apparently ends without distinct rim or binding, and is of about the same diameter as the base of the vessel: but the impressions are not quite concentric with the base.

There are no traces of impressions on the sides of the pot, or upon the angle itself, so that it is clear that the mat did not serve as a mould for the vessel, but merely as its support.

So far as I am aware, this is the only example of basket-work impressed upon pottery in this way either from Amorgos, or from any other part of the Mediterranean area. Mr. W. H. Holmes has made us familiar with the customary use of textile ornamentation upon the pottery of the North American mound-builders; but though schemes and motives of ornament derived from textiles are as common in the Old World as in the New, the actual impressions do not seem to have been in vogue anywhere except in America.

In this instance, too, the motive of the impressions can hardly have been decorative, as they appear only on the base, which would be concealed when the vessel was in use. It appears probable therefore that the mat thus recorded was used either (1) to prevent the vessel from sticking to the ground, while drying or in the kiln, or else (2) during the actual manufacture of the vessel. The former (1) is less likely, as a layer of unwoven rushes would have served at the drying stage, and in the kiln the charred fibres would almost certainly have left stains on the vessel, which are actually absent. On the other hand (2), small vessels can be handled upon a level surface without much fear of distortion; but a jar of the size of this specimen, with a base of some 10 inches (·25 m.) diameter and walls of considerable thickness, would certainly be so heavy that it could not be turned round, at the convenience of the potter, without great risk of distortion.

If, however, its foundation were laid on a circular mat of the size

of the intended base, and with a slightly thicker knot in the centre, as in this instance, close or continuous contact with the ground would be avoided, and the central pivot would to some degree supply the place of a turn-table or potter's wheel. If this mat and the vessel upon it had been subjected to manipulation of this kind, the lateral bending of the radial rushes, already described as due to a circumferential strain, would also be very completely accounted for.

The specimen has been presented to the Ashmolean Museum, Oxford, and a cast of the impressions to the Pitt-Rivers Museum.



POTTERY FROM AMORGOS, WITH IMPRESSIONS OF BASKET-WORK

Duk Duk *and other* Customs *as forms of* Expression *of the* Melanesians' Intellectual Life. By Graf v. Pfeil.

When after a lengthy intercourse with the Kanaka of that part of Melanesia which to-day we call the Bismarck Archipelago, the European has learned to some extent to know and to understand the habits of the natives among whom he lives, he is particularly struck by one feature which is so prominent that in a great measure it forms the key-note of that very peculiar composition which we call the native character. It is the strongly apparent desire towards physical and psychical seclusion. Where the native has been left entirely, or nearly so, to himself: where he has not been obliged to yield to the European's coercive influence, he will try his utmost to confine his intercourse to his own family and to the very next villages, with whose inhabitants he is probably connected by ties of blood. Any person from a village removed beyond the small district which the Kanaka looks upon as his home he considers a stranger, and consequently an enemy. This feeling might be justified if extended towards the intruding white man, but is difficult to understand when entertained towards nearly all individuals of the same race, provided the distance which separates their respective villages exceed that which can be accomplished in an easy ramble. It is difficult to say whether fear is the *root* of this strange disposition, or whether the continued practice of seclusion has bred up in the Kanaka that constant suspicious fear which never for a minute permits him to lose control over himself. It is probable that both tendencies are innate to the Kanaka, and that his character as we now observe it is merely the result of their combined effect prolonged through ages.

We can clearly distinguish a psychical and physical direction in this tendency towards seclusion, the extreme end of each being strongly marked. More difficult would it be to trace the line from which these two branches take their departure.

The Kanaka who is not yet influenced by civilisation hates strangers, in whom he sees only enemies. No wonder he tries to have as little communication with them as possible. The habit of cannibalism, which is still practised to a great extent in this part of the world, may be explained as an emphasis on their abhorrence of the stranger, whom they wish to exterminate. This habit may also be considered the extreme point of physical seclusion. Towards the black it is still kept up in its aggressive

form, in so far that no Kanaka may, without risk of life, attempt to visit the district of a tribe with which his own is not on distinctly friendly terms. Before the power of the white man had become sufficiently established, that aggressive inclination was also directed against him, and many white men became its victims. Since the Kanaka has been taught that the white intruder becomes the more disagreeable the more he is repulsed, he has contented himself with bearing his presence as a necessary evil, which presents as extenuating circumstance the introduction of a number of articles which, though not strictly necessary in themselves, are yet agreeable additions to life's comfort. If thus we may consider that, so far as our influence reaches, we have in some measure at least been able to diminish the Kanaka's physical seclusion, we must confess that it has up till now been perfectly impossible to remove the barrier which he has erected between his inner self and those who surround him. How little progress we have made in this direction may be gleaned from the fact that, in spite of the strong materialistic tendency of the Kanaka, we have not yet been able to teach him to look upon any of the productions of our manufacturing industry as a necessity. He likes our hatchets, our *laruhara*, wire, etc. He would, however, gladly dispense with any of these articles, even with matches, if through this sacrifice he could rid himself of the presence of the hated white man. There is only one thing the loss of which would draw a tear from the shallow well of his eyes—American tobacco. Alcohol and sugar possess no allurements for him; only the narcotic weed seems to possess the charm to soothe the savage Kanaka's breast. We have many instances to prove this. If we look at other parts of the world which have only been opened to trade within memory of man we find that clothing of some sort has been adopted by the savages, if not from want of it or from a sense of decency, so at least from a desire of ornament. In the Archipelago we compel the native to cover his nakedness, and force him, in a way, to become the purchaser of our cotton manufactures. When we visit him in his village on the coast, or among the mountains, we find that he has put his loin-cloth aside and resumed his accustomed nakedness. When labourers return to their homes they bring with them clothes, hatchets, and other goods they have received for the money due to them as wages. The boxes containing these articles are immediately plundered by the men's relatives or co-villagers: the articles are worn for a while as grotesque ornament, and then thrown aside, with exception of the hatchets, the superiority of which over the old stone or shell tool has become generally known and acknowledged.

This fact, that our trading goods have not been able to fetter the Kanaka's avarice further than they have, may be looked upon as a proof of both the physical and psychical seclusion, in so far, as the desire to possess these goods has not led to a more general intercourse between the two races, which in its turn might lead to a better mutual understanding. I have alluded to the difficulty we find in pointing to the spot where the physical and psychical branches of the Kanaka's desire for seclusion part asunder, but have always thought that this peculiar passive resistance to a new shape of wealth was a good markstone between the two extremes, one of which, as we have seen, finds its expression in the disgusting habit of cannibalism. As a further illustration of the extent to which the Kanaka carries his physical seclusion, I may state that that part of the Gazelle-peninsula which is known to us, though only thinly peopled, is divided in no less than twenty districts, in each of which another dialect or the same language is spoken, all of which differ so much that, while the inhabitants of two neighbouring districts may still converse together, those of localities further removed from each other have difficulty in making themselves understood when they happen to meet.

Far more difficult to define, but also more interesting to study, is the Kanaka's psychical seclusion. It might be argued that the racial differences are so great that a real understanding between the Kanaka and the European cannot be arrived at. If that were the case, the character of the African negro would or ought to remain as unintelligible to us as that of the Kanaka. We find, however, that we can easily read the negro when once we have gained his confidence, which the Kanaka seems entirely unable to bestow. His distrust, suspicion, and fear is not alone directed towards the white, but also against his own kindred; and the loud, joyous communicativeness which is an agreeable distinguishing feature in the negro character is utterly wanting in that of the Kanaka. Their councils are held in the darkest, remotest part of the forest; and even here their conversation is carried on in an undertone, and suspended the instant a newcomer appears. Their festivities, though noisy enough, are void of the sound of genuine mirth: and innate fear of some dark, ever-present, invisible danger never permits the Kanaka to lose control over himself for one instant, or to yield to the promptings of softer emotions, which he has perhaps long forgotten to harbour. His untutored mind is unable to give shape to his sinister apprehension, or, better, to reason that supposed danger out of existence; and his imagination, always more active than his reflection, fills the world with invisible beings gifted with the power and the will to do him harm.

His materialistic turn of mind interprets all supposed actions of the spirits as the expression of a desire to be fulfilled by him; and as he is unable to distinguish between cause and effect, nearly every event of which the origin is not at once apparent, is attributed to the agency of a spirit, and looked upon as a communication from them. He hears their voice in the sough of the wind, in the thundering breakers of the sea, in the rustling of the falling leaf; and the frequent shocks of earthquake, which indicate the ever diminishing throes of Nature's mightiest manifestation, are to him but expressions of discontent of some aggressively-inclined spirits. These require continual propitiation, not that they may do good, but that they may leave evil undone. When a Kanaka hears a noise he cannot at once interpret, he knows that a spirit is passing by. Looking in his supposed direction he says "*Uhakup*," "Are you bringing anything?" This expression conveys at the same time an invitation to stay and to partake of what is going to be brought or what may already be present. His imagination deceives him into hearing an answer—"*Hoio*," "Yes, indeed"; upon which he replies "*Uh*," "Come." We cannot wonder, after the foregoing, when we discover the endeavour on part of the Kanaka to surround most of his actions with a degree of secrecy, and when we find that he possesses customs shrouded in a mysteriousness which the Kanaka himself can or will not explain, and which must remain totally unintelligible to the European. One of these customs which the visitor in these parts often finds an opportunity to witness, and of which a part has often been described, is the Duk Duk. It is well known as a masked dance; but to my knowledge the various ramifications of this peculiar institution, together with the Eineth and Marawot, have not yet found very careful attention. We may not be far wrong if we assume that in the beginning the Duk Duk ceremony was nothing but another expression of the Kanaka's seclusive inclinations and of the worship of deceased ancestors. A few persons clubbed together and assumed a mask to frighten others from entering their territory and witnessing their proceedings. When there were no more strangers to frighten, the club members found that their affected secrecy tended to inspire awe into the members of their own family and tribe, which perhaps had grown numerous enough to permit a renewed seclusion, in so far as only certain individuals were allowed to become members of the club. The awe which the club inspired probably invested its members with a degree of authority which came to be coveted, so that applications for admission became frequent. The strong materialistic instinct of the Kanaka was not slow to turn this fact to account, and

admission was only granted to those who could afford to pay handsomely for the privilege. When once it was discovered that the club might be made a source of emolument, it would be deeply wronging the Kanaka character to think that he would have confined himself to the collecting of the comparatively small entrance fee of new members when new and effective methods could be devised by which every member of the club might draw a comfortable little income without being under the unpleasant necessity of doing more work than is absolutely indispensible, even for the laziest Kanaka.

Only men were admitted into the club, and it was thus easy to blackmail the women of the tribe, who, by the customs of the people, enjoy full possession of their own earnings. Being harder workers than the men they soon acquire property; and as there is no legitimate way of turning this stream of increasing prosperity into the men's pockets, the Duk Duk offers a very good means of preventing unfair accumulation of wealth in the hands of the women. To increase the club's authority and give effect to its blackmailing system it had to be shrouded with a new veil of mystic ceremonies. Women were thus forbidden to come anywhere near the spot where the Duk Duk members assemble. If an unfortunate woman happened to see the Duk Duk, *i.e.* the wearers of the mask, she was fined a certain quantity of *dewarra*. At all times the Duk Duk would suddenly appear, mostly, however, during the harvest season, because then the women had to be at work in the fields, and going to and fro, and they were then also mostly well supplied with *dewarra*, the proceeds of the sale of their agricultural productions. It would have been a source of grave suspicion had the blackmail system been directed against women only. To extend it also over men became easy enough, when the tribe had grown so numerous that not all the men could be members of the club, or when the members had so increased in number that new admissions would have unpleasantly reduced their income. Perhaps the natural seclusive tendency also came into play again. Thus also men, not members, were made tributary; but as it proved more difficult to wrest *dewarra* from them they were let off with a series of blows which, however well laid on, were nothing compared to the loss of even a small quantity of the worshipped shell coin. Thus in combining the effects of the Kanaka's natural bent for physical and intellectual solitude and his strong materialistic disposition, we explain easily the two Duk Duk characteristics, which at once strike the beholder—the fear of the women and the beating of the men.

It is but natural that when once the Duk Duk had gained a

certain amount of influence or even power, some individuals, in the first instance probably members of the Duk Duk, afterwards also not members, should have tried to make that power subservient to their own interests. At first the Duk Duk blackmailed those who were enemies to members of the club; later on those whose enemies paid for having them robbed, and gradually the Duk Duk assumed the character of a tribunal, not in the sense that by his verdict he had to establish right and wrong, but as a power with sufficient influence to enjoin peace on contending parties.

If thus the Duk Duk had gradually risen into a position which it required tact and shrewdness to maintain, it became evident that not every member could be allowed to wield its power indiscriminately in his own interest. It became necessary to place that influence into one hand, which, though perhaps corrupt, upheld at least the prestige of the club. It was not necessarily, but most likely, the inventor of the club or his descendant who was invested with the prerogative to call out the Duk Duk, a privilege which he succeeded in reserving for himself and his descendants after him. To-day only certain individuals are entitled to calling the Duk Duk, and we have thus amongst a perfectly savage race a peculiar instance of protection of intellectual property and of a well accentuated entail.

The Duk Duk, which appears with a certain regularity but only with the full moon, skips about for three days, while the lifetime of the Duk Duk which has been called up on a special occasion seems to be limited to a few hours.

Apart from the utilitarian purposes which the Duk Duk has to serve, it is the means of satisfying the metaphysical desire which, as we have seen, is so strongly developed in the Kanaka. The members of the Duk Duk celebrate certain feasts of very mysterious character, and it is not yet quite clear how they are connected with the Duk Duk, how they originated, and what they portend. One of these feasts, though in some way connected with the Duk Duk, is quite an independent institution, and is called *Elmuth*. At certain seasons in the year—the intervals seem to be irregular—a number of people, members of the Duk Duk, gather in a remote part of the forest at the call of the person who is entitled to call up the Duk Duk, and who is on this account called its owner.

In the dense bush they build huts, which they surround with a railing or fence of reeds so closely joined that it is difficult to peep through the chinks. The huts are built square, and the walls plastered with clay and whitewashed. On the

white ground of these walls the artist of the tribe paints most curious figures. One of them resembles a crocodile on high legs, with the tail rolled up like a hawser; the other reminds the European spectator of a monkey, a very striking circumstance and proof of a highly developed imagination on part of the Kanaka, because no monkey exists in that part of the world of which the Kanaka can possibly have any knowledge.

A third figure resembles the casuary, a bird with which the natives are familiar. On some of the largest trees outside of the fence other figures are drawn. One represents a stinging rayfish in the act of biting into a human arm. Some more arms and snakes are painted on another tree, and on a third we find two very curious shapeless figures, which represent two evil spirits: they are called *Turungun* and *Marungare*. Who and what these spirits are and what they do the Kanaka will not, or cannot, explain. They merely say that they are spirits of departed people. This is another of many proofs that the Kanakas believe in an existence after death, but would also prove again their sinister disposition, which leads them to think that even people whom they knew during their lifetime, with whom they were on friendly terms or even related, assume the shape of an enemy so soon as they leave their human friends and enter into the ranks of spirits. This fenced-in group of huts is accessible only to members of the Duk Duk. Anybody happening upon it unawares is fined heavily, and as a direction in which the "*Tararu*" lies is well known, nobody ventures thither. The festivities celebrated here are of a very peculiar character. I do not think that any European would be admitted to a really important one, and only the members are informed of the day fixed for any festivity. I only once succeeded in bribing an influential man to procure admittance for me, and should possibly not have succeeded then had not my official position added weight to my *dawaru*-supported request. I feel convinced that even then I was only permitted to witness a minor affair. About twenty men squatted on the ground in a semicircle with their faces turned towards the painted houses. All were silent: and my guide, subduing his own voice to a whisper, enjoined silence on me. He then sat down before the other members with his back turned towards them. After a while a basket containing all kinds of victuals was placed before him, the leader of the feast. He rose murmuring a few incomprehensible words over the contents of the basket, and stepping towards the other men, who now also had risen, he held certain kinds of food up to the mouth and nose of each individual, accompanying the action with some more words in an inaudible voice. He then replaced the food

in the basket. When he had finished the round, the basket was taken away, and all the guests sat down again. The silent meeting was then continued for an indefinite period. From that moment, to each of those present that kind of food is rendered *tambu* (that is, forbidden) which had been held up to his mouth. The *tambu* lasts perhaps for a month, perhaps even a year, and it is not alone food which is thus *tambued*, but also other objects—certain actions, or even words. Thus it may be made *tambu* to wear a certain kind of ornament, to sleep inside a house, or to pronounce certain words or names. It is remarkable that the latter habit forms a curious parallel to the custom called *Alonipu* of the Zulus. During this period of *tambu* the participators are subject to a certain control. After certain irregular intervals—which seem to be connected with the phases of the moon—they meet again at the "*Toraiu*," from which they march in a procession all round the neighbourhood. Without any kind of dress—instead of which they assume a grotesque war-paint—we discover in it the snake designs drawn on the trees before the "*Toraiu*"—they walk in Indian file. Under the right armpit they wear a plaited mat bag, from which a reed with a bushy whisp projects upwards and backwards. After a certain number of steps they all simultaneously slap their naked thighs, producing a noise audible at some distance. The whole ceremony described as the *Eineth* cannot be explained upon the basis of the Kanaka's materialism: but if the people attach any special significance to the *Eineth*, which is doubtful, they can certainly not clearly define it. The great repugnance they show to giving any information, and the difficulty the European experiences to witness these ceremonies regularly, renders it no easy task to explain the origin of the custom. We can, however, not go very far wrong if we seek an explanation in the character of the Kanaka, in which fear and distrust are coupled with gross materialism. It is, therefore, not at all unlikely that, as the Duk Duk is a means of extracting material advantages from mankind, the *Eineth* is a method of propitiating the spirits to avert evil. Another most remarkable feast is the *Marawot*. That the Kanakas attach most importance to it may be gathered from the fact that it is celebrated only at very long intervals. In 1889 it was for the first time beheld by Europeans. Kanakas who otherwise would scarcely care to meet give up all hostile feeling for the time, and at the *Marawot* an *omnium gatherum* takes place which shows that, although the desire for seclusion is an obstacle to all traffic, there are yet ties between the people that prove their consanguinity. From the scant information it was possible to collect it would seem that no

single individual can arrange a *Marawot* feast, but that the consent of not a few people is necessary. This information is supported by the fact of the rare repetition of the performance. To direct a number of diverging ideas into one focus is probably no easier task among reserved and distrustful Kanakas than it is among equally distrustful but more affable Europeans.

For the *Marawot* the people build a platform of bamboo, raised about 50 to 60 feet above the ground. The whole structure is covered with green foliage and wreaths, so that it almost gives the impression of an old ivy-clad tower; gorgeously coloured crotons give liveliness to the sombre green. The platform is about 15 feet square and projects on all sides over the under-structure. On it a certain number of young men have to perform a sort of war-dance with spears and other arms. The structure, which is only held together by means of ligatures made of the bark of trees, possesses little stability, and sways with every motion of the dancers and before every puff of wind. It is, therefore, not easy to perform the dance on the platform, which is not provided with any kind of railing. To ensure success and to prevent accidents a great many rehearsals are necessary, during which the dancers grow accustomed to the uncomfortable motion and the giddy height, and learn to move freely without betraying outward signs of discomfort. The dancers and their weapons are richly decorated with gaily coloured feathers of the various parrots and cockatoos which abound in the country. The only *Marawot* which was ever witnessed by Europeans was held in Matupit, a small island in Blanche Bay. It lasted three days, and there were perhaps 300 to 400 spectators from various parts of the Gazelle-peninsula and the Duke of York group. The bamboo structure was left standing; and if anyone thought it just possible that bamboos might get loose, and, dropping from such a height, endanger the lives of passers-by, he was at liberty to remove the thing: but these are minor considerations with the Kanaka, and the work was left to the Europeans.

It is at present perfectly impossible to trace the origin of these customs or to interpret them in any plausible way. They have, however, all one thing in common—they have to be paid for by the uninitiated; they are shrouded with mystery, which is only revealed to those who become members by paying a certain entrance fee, and they enrich the members, particularly the leaders of the feast. The entrance fee varies between 50 to 100 fathoms of *diwarra*, which is equal to £5 10s., or about the annual subscription to a good English club. I have already shown that these customs diverged into a speculative direction only when they had become sufficiently established to be sur-

rounded with a halo of authority. It would therefore be wrong to suppose that merely the view of possible emolument led to their establishment.

Respecting the direct gain of those who give the feast another difficult question presents itself: Who gains, and how is a profit obtained? The chiefs admit that they profit by a feast of that kind, yet they have to advance the *dewarra* necessary to defray the first heavy expenses. It is said that each visitor has to pay a certain quantity of *dewarra*; but how can that be controlled considering that no Kanaka will pay for a thing he can have for nothing? To see the dance he need only climb a cocoanut-tree, and his food he brings with him. Yet it is quite unlikely that any Kanaka would incur the expense of such a feast without a fair chance of profit. There remains only one possible method—the *tambu*. We have seen that the Duk Duk and the *Eimth* could pronounce certain things to be *tambu* for a given time. At the end of that time it has to be bought off with *dewarra*. In case of mourning—where the *tambu* falls on all the members of the family—the woman who is the nearest relative to the deceased pays a piece of *dewarra* to the next male relative, who passes it on diminished by a portion (which he keeps for himself) to the next male, and so on till a very small part reaches the last relative. This is repeated for every object which has been *tambued*. In this manner, again, the women have to produce the *dewarra*, which enriches the men. A similar rule is perhaps observed at these feasts. Most likely a number of *tambus* are pronounced, and they have to be bought off. Now the question arises: Is the *tambu* laid on the men alone? Who, then, produces the *dewarra*, and how does the club or the chief make their profit? If the *tambu* is laid on the women also, why do they come to visit the performance, knowing, as they must do, that all the expense falls on them? It is clear that we do not as yet possess all the facts concerning these curious customs, and that it will require careful study to collect them, a task rendered particularly difficult through the reticence the Kanaka observes in conversation about these matters. But when we shall have solved the *dewarra* question we shall probably find that it represents only the speculative phase of a custom of which the key is to be looked for in that part of the Kanaka character which it is his constant effort to hide from the inquisitive glance of the European and from which springs the root of his manifest desire for seclusion.

The existence of all the customs we have described under the heading of Duk Duk is doomed. The awe which they formerly inspired has considerably faded before the European's contemptuous derision. The chiefs feel their power slip from their

hands, and hasten to turn into solid wealth a prerogative which, if they tried to preserve it, might vanish altogether. They sell the right of raising the Duk Duk to the tribes further inland, where the thick bush shields it from the European's withering eye, and where critical reflection lies as yet latent in the mind of the unsophisticated savage. They receive good sums from the new purchasers, and besides reserve to themselves the right of levying fines in case all the intricate rules are not strictly observed, thus ensuring to themselves a fair income until such time when white man's irresistible advance will necessitate a renewed removal in regions still more remote.

That time is not far distant. The expansion of the white races over the globe is a necessity which will slowly perhaps, but surely, break down all the barriers raised by climate and ruggedness to retard his progress in these islands. No time ought to be lost, therefore, to collect all possible information about customs of a race which is one of the very few still living in the stone period.

The plough of civilisation, in turning up hitherto virgin soil to prepare it for the seed of European culture, is sure to root up many weeds which, though noxious in the new field, were, if useless, at least ornamental. And as the zoologist reconstructs curious animals from the remains found in the layers of the crust of the earth, and through them is enabled to trace the origin of the living species of animals, so is the study of habits and customs of pristine races necessary to trace the development and history of our own.

May 25th, 1897.

E. W. Brabrook, Esq., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The President observed that since the last Meeting the Institute had lost an early and most valuable supporter, and he himself had lost a personal friend of many years' standing, by the death of Sir Augustus Wollaston Franks, who was an accomplished student of every branch of antiquity. Nothing was more remarkable in his long career as Director and ultimately as President of the Society of Antiquaries of London than the depth and breadth of his archæological learning. There seemed to be no subject that could be brought before that Society of which he was not master. In connection with the branches of archæology which touch most closely upon anthropology, he will be remembered for his researches into late Celtic antiquity, and for his happy definition of that period of art. As keeper of the ethnographical collections of the British Museum, and acting trustee of the Christy Collection, he commenced the practice which has been continued under Mr. Read now his successor, of bringing before the Institute any remarkable ethnographical objects that were about to be acquired by either of those Institutions. He was for many years one of our Vice-Presidents and displayed towards this Institute the same enlightened liberality which has distinguished him in other connections, having contributed largely to the fund raised for clearing off the debt with which the Institute was encumbered at its starting. His munificent gifts to the nation, far exceeding in value all that he had ever received in salary in his public employment, were fitly acknowledged by his being raised to the dignity of K.C.B. He was also a liberal donor of books to the Society of Antiquaries. When, about twenty-five years ago, it was suggested that the Council of the Institute should dine together after their meetings, Mr. Franks was one of those who most warmly supported the proposal; for a long time he sacrificed other engagements to that of thus meeting his colleagues, and he introduced to them at those dinners many congenial guests. This may appear to be a trivial incident to record, but it is in such slight indications of a kindly and generous nature that some of the pleasantest recollections of

departed friends are to be found. Of his skill and good fortune as a collector of antiquities, of his great learning in many obscure branches of Oriental art, of his enthusiastic devotion to antiquarian research, of his patient assiduity as an investigator, it is hardly necessary to speak. He inspired those who knew him best with the deepest admiration and attachment, and has left, not only in the public institutions of which he was an officer, but also in this Institute, a memory that will long be cherished.

Mr. W. GOWLAND then read Mr. HALL CHAMBERLAIN'S paper —"A Quinary System of Notation used in Lu-Choo."

After which Mr. A. L. LEWIS read his paper on "Ancient Measures in Prehistoric Monuments."

Discussion on these papers were carried on by the President, Messrs. GARSON, LEWIS, GOWLAND, and GOMME.

A vote of thanks was passed to the two authors.

Ancient Measures *in* Pre-Historic Monuments. By A. L. Lewis, F.C.A., Treasurer, Anthropological Institute.

[WITH PLATE XIII.]

I have no doubt that all who may listen to or read this paper are more or less acquainted with the account given by our much-lamented colleague, the late Mr. J. T. Bent, of the ruined cities of Mashonaland, and with the remarkable series of measurements found in them by Mr. R. M. W. Swan, but it is necessary that I should recapitulate the principal facts which bear upon the subject now to be considered. The largest ruins, it will be remembered, consist of a building known as the great Zimbabwe, constructed of small-squared stones without mortar, with herring-bone and other decorations on some parts of the walls, and containing a large and a small round tower, which, when complete, were probably solid cones of dry masonry; and of a fortress on a hill between 600 and 700 yards north from the Zimbabwe, which also contains what appears to have been a temple. There are other ruins of a similar description at Matimbele and on the Lundi river, besides numerous smaller forts. At all the larger buildings there are indications of sun-worship or observance and of star-worship or observance, the character of which may be most readily gathered from the following extracts from Mr. Swan's chapter on orientation and measurement.

Having described various methods of ascertaining the length of a year by observing the position of the sun relatively to the equator or amongst the stars he says:—"At Zimbabwe all these methods seem to have been used, and to do so does not necessarily imply more astronomical knowledge than is possessed by the peasantry in any of the more secluded districts of Europe, where watches are not much used, and where almanacks are not read, but where the people have the habit of telling the time of the day and of the year by the motions of the sun and of the stars, for, to an agricultural people, the change in position of the sun in summer and winter is as obvious as the seasons themselves, and the variation of the times of rising of the stars with the seasons can as little escape observation."

"Zimbabwe is in south latitude 20° 16′ 30″, and the sun, when rising there at the summer solstice, would bear east 25° south were the horizon level, but Mount Varoma interposes itself between the temple and the rising sun at this time, so that the sun attains an altitude of 5° before its rays reach the temple, then its amplitude will be more nearly 24°, and a line

produced in this direction from the altar will pass across the doorway of the sacred enclosure, where the curve of the wall changes its radius, and, roughly speaking, through the middle of the chevron pattern: the same line drawn in an opposite direction for 73 feet would fall on a tall monolith which we there found lying by its well-built foundation . . . this monolith was sufficiently tall to receive the rays of the sun when it rose over Mount Varoma, and the shadow of a monolith erected on the wall would fall on it at the same time, thus marking with great accuracy the occurrence of the solstice."

The points of sun-rising and setting at the summer and winter solstices are further distinguished in the various buildings by the positions of the decorative patterns on the outside walls, of which full particulars are given by Mr. Swan. The indications of star-worship or observance are of a very similar nature: some of them are as follows:—

The apparently irregular outline of the enclosing wall is really composed of a number of arcs of circles differing in radius, and the centre of each of these arcs, where altars were usually placed, has had a doorway or some other means of marking out the meridian placed north of it. "True north of the centre of the greater round tower we have a doorway in the wall of the sacred enclosure . . . the part of the great outer wall north of the tower seems also to have been marked, for about this point we found a great step constructed on its top about 5 feet high. Above the temple at the east end of the fortress on the hill a cliff rises perpendicularly for 50 feet, and poised on its top there stands a most remarkable great rock, which may once have been an object of veneration to the worshippers in the temple beneath it: it forms one of the highest points on the hill: a line drawn true south from this rock and produced 680 yards would pass through the doorway in the great temple and fall on the altar in the centre of the decorated arc. Until this line suggested itself we were puzzled to account for the peculiar character of the doorway."

"Every point from which northern stars could have been observed has been used for this purpose, and there is no temple there from which northern stars were not observed, while at the same time the openly displayed southern sky has been left unregarded; this of course points to a northern origin for the people, and suggests that before they came to Zimbabwe they had acquired the habit of observing certain stars . . . It seems a plausible supposition that, while the great temple itself was devoted to solar and analogous forms of worship, the little circular or partly circular temples within its walls . . . . were dedicated to the cult of particular stars."

Respecting the subject more immediately before us, that of measurement, Mr. Swan says:—"The diameter of the great tower seems to have represented the unit of measure in the construction of the curves of the outer walls, and of all the regularly curved inner walls in the great temple, and in all the well built temples in Mashonaland. the diameter of the great tower at its base is 17·17 feet or 10 cubits (of 20·62 inches), and this is exactly equal to the circumference of the little tower."

On examining the radii and diameters of the various curves in the walls of the different buildings explored, Mr. Swan has found and given particulars of—

3 instances where the measurement is 17·17 feet.
3 instances where the measurement is double that, namely, 34·34 feet.
7 instances where the measurement is 54 feet.
3 instances where the measurement is half that, namely, 27 feet.
3 instances where the measurement is $107\frac{1}{3}$ feet or practically twice 54 feet.
2 instances where the measurement is 169·3 feet, and
1 instance where it is half that or $84\frac{1}{2}$ feet.

The diameter of the great tower is, as has already been stated, 17·17 feet, and that distance (including its double 34·34 feet) is found in six other instances. That distance, multiplied by 3·14 which is the ratio of circumference to diameter, equals 54 feet, and there are thirteen instances in which the 54 feet, or their half, or their double occur. When multiplied by $3·14^2$ the 17·17 feet amount to 169·3 feet, and of this, or its half, three instances occur. Thus there are twenty-two cases in which the measurements appear to be based on the diameter of the great tower, and these include nearly all the cases in which satisfactory measurements can be obtained: in those places where none of these measurements are found there seems always to have been some special reason for the exception. Mr. Swan says:—"The only interesting mathematical fact which seems to have been embodied in the architecture of the temples is the ratio of diameter to circumference, and it may have had an occult significance in the peculiar form of nature worship which was practised there; we do not suppose that it was intended to symbolise anything of an astronomical nature, and it is extremely improbable that the builders of Zimbabwe had any notion of mathematical astronomy, for their astronomy was purely empirical and amounted merely to an observation of the more obvious motions of the heavenly bodies:[1] when the minds

[1] I have quoted Mr. Swan's own words upon this subject because they express very clearly some conclusions I had myself arrived at from other data.

of men were first interested in geometry it would at once occur to them that there must be some constant ratio between the circumference of a circle and its diameter, and they would easily discover what this ratio was, and they may have considered this discovery so important and significant that they desired to express it in their architecture."

If the builders of the Zimbabwe really had this purpose in view it must be confessed that they chose a more complicated manner of expression than might have been expected, but it does seem that certain definite measurements do occur so frequently in and about these structures that their occurrence cannot be a mere coincidence, but must be the result of a system of some kind.

It is a long distance to Great Britain from Mashonaland, or even from Arabia, which Mr. Bent thinks (with much reason) to have been the fatherland of the builders of the Mashonaland monuments, but I can find many instances of peculiarities of position and measurement in connection with our own stone circles, which are the same in principle and often in detail as those observed in South Africa by Mr. Swan.

I have already drawn attention in numerous papers read before the British Association, the Anthropological Institute, and various archæological societies, to the connection of our circles with the rising sun, and in some cases with the northern stars, by means of menhirs, hills like Mount Varoma, or "remarkable great rocks" somewhat like that on the cliff above the temple at Zimbabwe, and I shall therefore confine my remarks on the present occasion to coincidences of measurement.

It is only within the last few months that Mr. C. W. Dymond, C.E., F.S.A., has published the final results of his very careful and precise measurements of the important group of megalithic monuments at Stanton Drew, seven miles south from Bristol, and has thereby given us the means of accurately comparing another set of measurements.

The Stanton Drew group consists of six items, namely, three circles of different sizes, two of which have short avenues attached to them, one group of three stones known as the "Cove," two stones in another direction, and a solitary stone called "Hautoville's Quoit." Of these the Cove, the central circle, and the north-eastern circle are in a straight line in one direction: and the Quoit, the central circle, and the south-western circle are in a straight line in another direction. Some people regard these lines as accidental coincidences, but the

chances are at least 100 to 1 against either of them happening accidentally, and perhaps 10,000 to 1 against both of them occurring in a group of only six items; the existence of similar lines in connection with other circles proves that they were intentional, and this proof is still further sustained by the proportioned diameters and distances.

The diameters of the circles are:—

North-east circle, 97 feet, or 100 of an ancient foot of 11·64 inches.

South-west circle, 145 feet, or 150 of an ancient foot of 11·64 inches (within 6 inches).

Great central circle, 368 feet, or 380 of an ancient foot of 11·64 inches (within 7½ inches).

The length of the straight line from the centre of the "Cove," through that of the great circle to the centre of the north-eastern circle is 1,367 feet 8 inches, or not quite 1,410 of the foot of 11·64 inches, that is (within a working error of 8 inches (+) per 100 feet) 14 diameters of the north-eastern circle.

The length of the straight line from the centre of the great circle to Hauteville's Quoit is 1,856 feet, or 1,913½ of the foot of 11·64 inches, that is (within a working error of 9 inches (+) per 100 feet) nineteen diameters of the north-eastern circle, or five diameters of the great circle. And I may remark that this point is the nearest to the great circle which brings in the diameters of both circles. This in my opinion tends to show that the position of Hauteville's Quoit was intentional and not accidental.

The length of the straight line from the centre of the south-western circle through that of the great circle to Hauteville's Quoit is 2,567½ feet, or 2,647 of the foot of 11·64 inches, that is (within a working error of 4 inches (−) per 100 feet) seven diameters of the great circle.

The distance from the two stones to the centre of the great circle is 3,305 feet,[1] or 3,407¼ of the foot of 11·64 inches, that is (within a working error of 5 inches (−) per 100 feet) nine diameters of the great circle.

We find, therefore, that the diameters of the circles are in the relative proportions of 5, 7½, and 19, that the diameter of the smallest circle is repeated fourteen times and nineteen times in other measurements, and that the diameter of the largest circle

[1] In his first publication Mr. Dymond stated this distance at 3,293 feet, and that from the great circle to Hauteville's Quoit at 1,852 feet only. If Mr. Dymond, notwithstanding his engineering skill and modern appliances, found mismeasurements in his own work we need not be surprised at finding fractional working errors in the measurements of those who set up these monuments so many centuries ago.

is repeated five, seven, and nine times in other measurements. These latter coincidences are not mentioned in Mr. Dymond's book, but have been deduced by me from his measurements, and there may be yet others which I have not discovered.

Five, seven, fourteen (which is twice seven), nine and nineteen are all more or less significant numbers. Nine is frequently associated with the stone circles, many of which are called "Nine stones," though they have originally consisted of more than that number: those who resorted to the Men-an-tol in Cornwall to heal their ailments passed through the hole in the stone nine times. Nineteen is the lunar cycle, the number of years in which it was thought the sun and moon returned to the same relative place in the heavens, and allusions to it have already been suspected in circles formed of nineteen stones. In connection with this number I must remind you of the oft-quoted extract from Hecataeus,[1] given by Diodorus Siculus, respecting the island of the Hyperboreans, where Apollo (or the sun) had a stately grove and renowned temple of a round form, beautified with many rich gifts, and of which he says farther, "that in this island the moon seems near the earth, that certain eminences of a terrestrial form are seen in it, that the god visits the island once in the course of nineteen years, in which period the stars complete their revolution, and that for this reason the Greeks distinguish the cycle of nineteen years by the name of the greater year." There is little doubt that the island referred to was Great Britain, and the temple has been thought to be that at Abury, but Stanton Drew, though much smaller, is far more accessible from the sea, and therefore more likely to have been known to casual visitors, and the embodiment of the number nineteen in its measurements makes its identity with the temple of Hecataeus very probable.

What Mr. Dymond has done for Stanton Drew, Mr. Hansford Worth, C.E., of Plymouth, has done for the remains at Merivale Bridge, Dartmoor: that is, he has given us, for the first time, a thoroughly accurate plan of them. These remains consist of two double rows of stones, running from slightly north of east to slightly south of west; the southern lines extend beyond the northern lines at each end, but further at the west than at the east: the distance between the two sets of rows is greater at the west than at the east, and nothing seems more unlikely at first sight than any fixed measurement or proportion in the laying out of these lines. Starting, however, at the narrow or east end we find that the length of the overlap of the southern beyond

[1] It is not certain whether this is Hecataeus of Abdera, who lived in the fourth century B.C., or Hecataeus of Miletus, who lived in the sixth century B.C.

the northern lines is the same as the width between the two, while the distance between the eastern ends of the northern and southern rows (diagonally) is the same as the greatest width of the two rows from outside to outside at the west end, viz., 1,300 inches, or 100 of a foot of about 13 inches, which seems to have been the unit of measurement; the distance (diagonally) between the western ends of the northern and southern lines is 2,600 inches, or 200 units. In other words the longest side of the triangular ending of the lines at the east end is the same length as the shortest side, and half the length of the longest side of their triangular ending at the west end. The length of the southern beyond the northern lines is in the proportion of five at the western end to two at the eastern end: the length of the southern lines is 10,369 inches, or 797·6 (practically 800) of the 13-inch unit, that is, eight times the distance between the ends of the rows at the east end, and four times the distance between the ends of the rows at the west end. The length of the northern lines is 7,148 inches, or 549·8 units (practically 550). A "bird's eye" view of these remains—a sort of "restoration" in fact—published in Rowe's "Perambulation of Dartmoor," 1830, depicts a circle at the eastern end of the northern lines, but Mr. Hansford Worth has satisfied himself that no such circle ever existed, and it may be considered certain that the eastern ends of the lines have not been interfered with. The western ends of both rows are represented in the same view as terminated by single stones somewhat taller than the rest, but these are not there now, nor can it be ascertained whether they ever existed: if they did they would bring the lines up to 800 units and about 552 units respectively, and there seems no reason to suppose that any other stones have been removed which would make any material alteration in the proportions stated. A small tumulus surrounded with stones stands across the southern lines very near their centre, it is in fact about 10 or 12 feet nearer the eastern than the western end, and anyone who objects to the idea that these lines were laid down by measurement is entitled to make the most of that difference; but I think it probable that this tumulus was made after the lines had been constructed, and that the exact middle of the lines was not ascertained by those who erected it. Besides the two double rows there are a circle of small stones and a menhir to the south of the western end of the lines; such measurements as can be deduced from them do not appear to be based on the same unit as those of the rows, but a straight line taken from the menhir through the centre of the circle due north would strike the western end of the northern lines and pass on to the

western extremity of Great Mis Tor. It seems probable therefore that the menhir and circle were set up at a later period than the rows, as they appear to have been set to them, but not at distances based on the same unit of measurement.

Our Journal for August, 1895, contains a paper in which, amongst other things, I have recorded a number of remarkable measurements and proportions in connection with five circles on Bodmin Moors in Cornwall, but, as the details are given in full in that paper, I need now only say that those circles, like the monuments we have been considering to-night, seem to have been arranged with much care and approximation to accuracy, for some purpose, or with some idea in view, which we are at present unable to ascertain.

The principal questions that we have to settle are, firstly, do the proportionate lengths and distances really exist? and secondly, if they do exist, are they the result of intention, or of accident?

As to the existence of the proportionate lengths and distances, I must point out that they are taken, not from my own measurements, but from the careful plans of skilled engineers and archæologists, most of whom have no sympathy with the use I am making of the facts they have recorded. My part in the matter has simply been the conception that the multiplication table might usefully be applied to their figures, and its application accordingly, with the results which I have now laid before you, and which can be checked by anybody.

If it be admitted that the proportionate lengths and distances do exist, it will be for everyone to form his own opinion as to whether they were intentionally arranged or whether they are all the result of mere blind chance. For myself, I admit it to be difficult to believe that these apparently rude constructions have in reality been very carefully measured and arranged, and it is only by degrees that I have come to find it many times less difficult to believe this than to retain the old trust in the working of accident and chance.

Of course the further questions arise, "What do these arrangements mean?" and "Why should all this labour have been undertaken?" and I have been told, in effect, that unless the meaning of the facts can be explained their existence cannot be admitted. Of those who think thus I will ask in return, "Why did the builders of Stonehenge drag forty or fifty 'bluestones' of no inconsiderable weight from Wales, Devonshire or still further away, to Salisbury Plain?" "Why did the early inhabitants of Dartmoor set up a row of stones, nearly

two miles long, extending from a circle on one side of the river Erme to a tumulus on the other side of it?" We cannot deny that these things were done, because most of the stones remain there to this day, but we do not know why they were done, and so it is with the measurements.

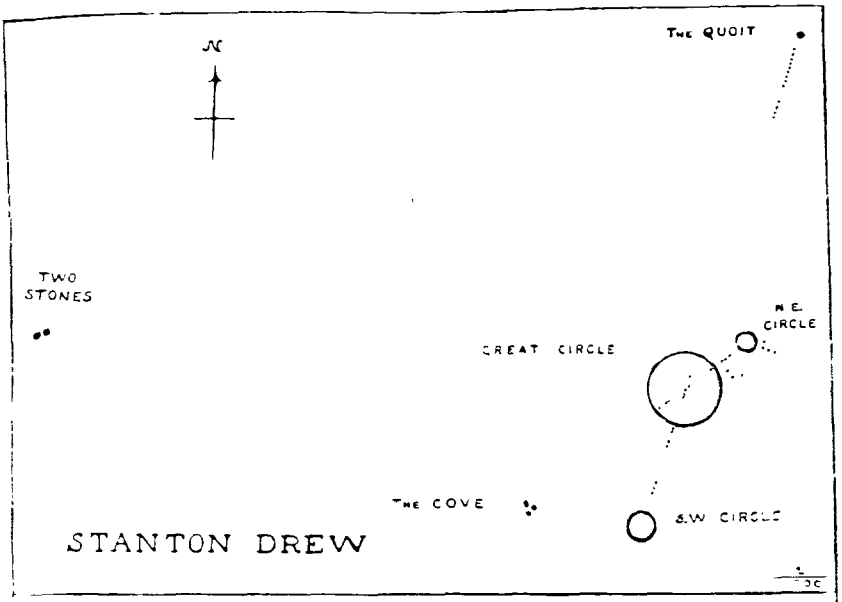
Finally, I have to point out that in each of the monuments I have spoken of the unit of measurement, if such there were, appears to have been different, which seems to indicate a separate influence, personal or otherwise, in the construction of each of them.

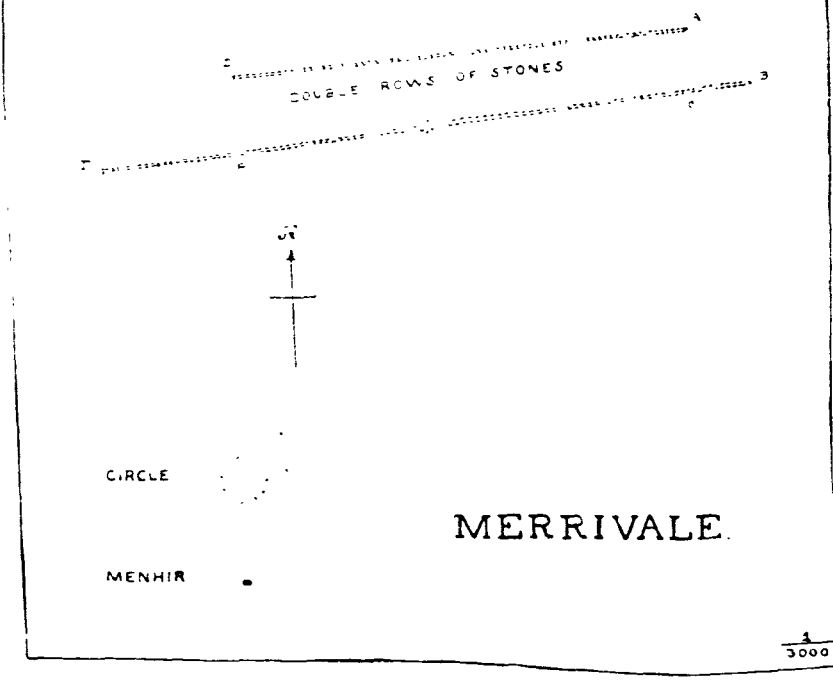
In setting up a number of stones in a large and regular circle there must at the very least have been the describing of a circle on the ground by means of a rope or pole, one end of which would be fixed to the centre, and the other taken round the circumference. In some cases this rope or pole may not have been measured at all; in others, and especially where proportionate measurements were intended, it may have been very carefully measured by any unit that happened to be available. All the units I have spoken of were in use round about the Mediterranean from two to three thousand years ago, and may have come here at various times and in various ways, the first to be brought here being perhaps by no means the oldest; but it does not necessarily follow that the unit I have mentioned in each case was actually used: I can only say that it suits the measurement, by working out in even numbers, better than any other that I can find, but that I may not have exhausted them all. The unit of measurement is, however, quite a secondary thing, and can, perhaps, never be proved, but only inferred; the great point to be established is that some of these apparently rude structures were in reality laid out in careful proportions, for some purpose, or with some idea, which we may hope at some time or other to discover.

The PRESIDENT complimented Mr. Lewis on his paper. He quite agreed that the measurements cannot be accidental, but must have been intentional.

Dr. GARSON remarked that the large temples, their positions, and measurements, were certainly not arrived at by chance, as can be seen by the orientation of Egyptian pyramids, temples, and some of the large temple remains, very probably of neolithic people. Professor Flinders Petrie observed this in this year's discoveries.

Mr. GOMME begged to differ from Mr. Lewis. He wanted evidence on measures *not* fitting, as well as measures suiting this theory.


N
THE QUOIT
TWO STONES
N.E. CIRCLE
GREAT CIRCLE
THE COVE
S.W. CIRCLE
STANTON DREW


DOUBLE ROWS OF STONES
N
CIRCLE
MENHIR
MERRIVALE.
1/3000

Mr. LEWIS said in reply to Mr. Gomme that there were doubtless many of the rude stone monuments in which proportion could not be traced, but that fact in no way interfered with the fact that in others proportion could be traced. Even where there were no means of tracing it, as for instance in a single circle with no measurements about it of which to make a comparison, the diameter might have been based upon some unit or other and carefully measured from it. He thanked the meeting for the manner in which his paper had been received.

Explanation of Plate XIII.

Stanton Drew reduced from Mr Dymond's plans to about 1 in 12,000. In consequence of the smallness of the scale the sizes of the Quoit, Cove, two detached stones and avenues are considerably exaggerated, and the circles are represented by continuous lines instead of separate stones, but the diameters of the circles and distances between them are carefully measured. The length of the line from the centre of the Cove through that of the great circle to the middle of the north-eastern circle is fourteen diameters of the north-eastern circle The length of the straight line from the centre of the great circle to the Quoit is five diameters of the great circle or nineteen diameters of the north-eastern circle The length of the straight line from the centre of the south-western circle to the Quoit is seven diameters of the great circle, and the distance from the two stones to the centre of the great circle is nine diameters of the great circle (all within a working error of less than one per cent).

Merrivale reduced from Mr. Hansford Worth's plan to about 1 in 3,000. In consequence of the smallness of the scale the stones are somewhat enlarged in size, but the lengths of the lines and distances between them are carefully measured. The distance from A to C (inside the lines) is the same as that from C to B The distance from A to B is the same as that from D to E (outside the lines), which is half the distance from D to F, which latter is a quarter of the distance from F to B (the length of the longest line). The error of workmanship in these measurements is hardly distinguishable There are some hut circles, detached cairns, etc., which are not indicated here as they have no connection with the rows.

Notes *on* Crania *of* Australian Aborigines.

By W. L. Henry Duckworth, M.A., Fellow of Jesus College, Cambridge. Communicated by Professor Macalister.

The following notes refer to three male skulls: of which one is in the Cambridge Museum, the others in the possession of Prof. Haddon and J. B. Lock, Esq., respectively: the exact localities whence they came could not be ascertained. The principal points of interest are the following: The skull "A" is a heavy-browed prognathous skull of small cubic capacity; the central upper incisor tooth on the right side has been punched out. The remaining teeth are in good preservation; synostosis commencing in the sutures near the pterion on each side denotes the maturity of the specimen. It is a typical male skull of the "hypsistenocephalic" variety, and resembles specimens from the North Western parts of Australia and from Queensland.

In the specimen B, a large trephine hole (made *post mortem* apparently) pierces the right parietal bone. The most noticeable feature is the irregularity of the contour of the cranial vault in the median sagittal plane: this conformation, which has been termed bathrocephalic,[1] is unusual in skulls of aboriginal Australians. Besides, the specimen is scaphocephalic to a degree noticeable even in an Australian skull, and this is no doubt connected with the early obliteration of the sagittal suture, of which only slight traces persist (though the wisdom teeth have not yet completely perforated the alveolar margins). An exception to the last statement must however be made in the case of the third molar on the left side of the mandible, which is cutting its way through the alveolar border so displaced that its crown looks directly forwards instead of upwards; and abuts on the posterior surface of the adjacent second molar. The molar teeth are all of great size, and shew but slight evidence of usage. The petrous bones bear sharp eustachian processes on their inferior surfaces, and the foramen ovale on the left side is only separated from the petrosphenoid suture by an exceedingly thin bony lamina, and even the latter is absent from the right side on which the foramen spinosum is deficient. These are

[1] Two other skulls in the Cambridge collection, one being that of a Frenchwoman, present this peculiarity. In an article by Giacomini in the "Archives Italiennes de Biologie," 1882, p. 251, a similar skull is figured, and the brain contained in it is described as possessing a double Rolandic sulcus. This, however, does not invariably accompany the deformity for the Rolandic region was normal in a bathrocephalic head dissected in this Anatomy School.

probably examples of the persistence of a state of affairs normal in the fœtus.

Skull 2154 in the Cambridge Catalogue.—This is another very prognathous specimen presenting in a marked degree the features typical of the aboriginal Australian's cranium. It is the skull of an adult male, but is not of advanced age, as the wisdom teeth have not long pierced the alveolar margins of the jaws. The right central upper incisor has been punched out. Marked scaphocephaly is shewn, but it is noteworthy that the sagittal suture is here quite unaffected by synostosis. There is a large epipteric ossicle on the left side.

Measurements relating to these three specimens have been recorded in tabular form. On comparing these with the figures drawn up as averages from measurements of the crania already in the Museum (*cf.* "A Critical Study of the Crania of Aboriginal Australians," this Journal, 1894.), I find exceedingly little deviation from the average. Two points are worthy of remark however: the orbital breadth, 47 mm., of the skull A, exceeds the average (41 mm.) drawn from measurements of twenty male crania: and the skulls A and 2154 are a good deal lighter than the average skull: this diminution in weight seems to affect both cranium and mandible. Lastly, observations made in reference to certain characteristics of Australian crania, gave results as follows: Hypsistenocephaly, supra-orbital notches (not foramina), vesalian foramina and a transverse occipital torus, occur in each specimen. The glenoid cavities are moderately deep in A, but much more shallow in B and in 2154, and in the latter give evidence of osteo-arthritis. The great wings of the sphenoid are deeply channelled on their external surfaces in A and 2154, but not in B.

The outline of the squamous part of the temporal bone on the side of the cranium, shews an angle where the mastoid portion joins it in A and 2154, but in B the transition is more gradual.

Cranium denoted by A. in the possession of J. B. Lock, Esq.
„ „ B. „ „ Prof. Haddon.
„ „ No. 2154 in the C. U. Anatomical Museum.

THREE CRANIA OF AUSTRALIAN ABORIGINES.

TABLE OF MEASUREMENTS.

	A.	*2154*	*B.*
Catalogue number			
Age	Adult.	Adult.	Adult.
Sex	♂	♂	♂
Cranial capacity	1225	1180	1300
Maximum length	180	175	193
Opisthro-nasic length	175	171	183
Ophryo-occipital length	176	170	189
Maximum breadth	127	133	130
Bi-asterial breadth	107	104	112
Bi-stephanic breadth	108	100	108
Bi-auricular breadth	119	116	112
Minimum frontal breadth	98	90	95
External biorbital breadth	110	106	107
Bi-zygomatic breadth	137	136	123
Bi-malar breadth	118	98	115
Bi-maxillary breadth	98	98	89
Jugo-nasal breadth	103	102	101
Naso-mental length	120	114	110
Opisthro-alveolar length	95	82	89
Naso-alveolar length	74	64	64
Basi-alveolar length	102	108	99
Basi-nasal length	101	98	100
Basi-bregmatic length	132	132	136
Basion-bolion length	130	127	124
Bision-lambda length	117	110	115
Basi-inion length	82	73	80
Basion to opisthion length	41	33	34
Breadth of foramen magnum	32	30	27
Orbital height	34	30	34
Orbital breadth	47	41	42
Nasal height	52	46	44
Nasal breadth	32	29	31
Palato-maxillary length	59	56	60
Palato-maxillary breadth	68	62	71
Arcs Frontal	124	124	136
Parietal	124	118	141
Occipital superior	72	66	68
Occipital inferior	44	45	47
Supra-auricular	297	293	295
Oblique parietal	343	346	353
Jugo-nasal	118	110	114
Horizontal circumference	496	487	515
Minimum inter-orbital breadth .	26	23	25
Occipito-spinal length	191	170	195
Occipito-alveolar length	201	180	205
Mandible-symphysis height	34	36	33
Coronoid height	64	62	56
Condylar height	60	59	51
Gonio-symphysial length	75	80	80

TABLE OF MEASUREMENTS—*continued.*

Catalogue number	*A.*	*2154*	*B.*
Age	Adult.	Adult.	Adult.
Sex	♂	♂	♂
Inter-gonial breadth	99	105	96
Inter-coronoid breadth	104	100	94
Inter-condylar breadth, exterior ..	130	121	115
Inter-condylar breadth, interior ..	91	88	72
Breadth ascending ramus	33	36	33
Angle	123°	107°	110°
Basi-mental length	110	108	103
Ophryo-mental length	141	135	135
Weight of jaw	80	92	85
Weight of jaw and skull	707	593	749
Weight of skull	627	501	664
	R.L.	R.L.	R.L.
Length, parieto-sphenoid suture ..	12	3 w.	11.11
		R.L.	R.L.
L. lacrymo-ethm. suture	13.8	7.5	8.9
Choanæ, height	22	26	20
Choanæ, breadth	32	28	29
Length, floor of nasal cavity	53	57	52
Combined length three molar teeth ..	{29 29 / 32 31}	29	57
L. molars and pre-molars	{43 43 / 45 45}	41	52
Least distance between temporal crests	99	92	106
Index · Cephalic	70·6	72·6	67·4
Vertical	73·4	75·4	76·5
Alveolar	101	110·2	99
Orbital	72·3	73·2	81
Nasal	61·5	63·4	70·5
Palato-maxillary	115·3	106·9	118·4
Facial (total)	97·76	100·74	91·2
Facial superior (Broca) ..	69·34	60·3	72·35
Facial superior (Kollmann) ..	54	47·1	52
Stephano-zygomatic	78·8	73·5	87·8
Gonio-zygomatic	65·68	77·2	78·04
Naso-malar (O. Thomas) ..	114·6	107·8	112·87
Dental (Flower)	42·6	41·8	52
Pterion-ossicles .. .. {R. ..	absent	absent	absent
{L. ..	absent	present	absent
Tuber-maxillare	large	large	small
Inferior temporal crest	spiny	spiny	tubercle
Posterior pal. spine	obtuse	acute	bifid
Fronto-maxillary suture	absent	absent	absent
Spheno-maxillary suture (sub-orbit) ..	present	absent	absent

CRANIUM OF AUSTRALIAN ABORIGINAL.

TABLE OF MEASUREMENTS.

Catalogue number.. ..	*B.*
Age..	Adult
Sex	♂
Cranial capacity	1,300
Maximum length	193
Ophryo-inion length	183
Ophryo-occipital length ..	189
Maximum breadth	130
Bi-asterial breadth	112
Bi-stephanic breadth	108
Bi-auricular breadth	112
Minimum frontal breadth ..	95
External bi-orbital breadth ..	107
Bi-zygomatic breadth	123
Bi-malar breadth	115
Bi-maxillary breadth	89
Jugo-nasal breadth	101
Naso-mental length	110
Ophryo-alveolar length ..	89
Naso-alveolar length	64
Basi-alveolar length	99
Basi-nasal length	100
Basi-bregmatic length	136
Basion-obelion length	124
Basion-lambda length	115
Basi-inial length	80
Basion to opisthion length ..	34
Breadth of foramen magnum ..	27
Orbital height	34
Orbital breadth..	42
Nasal height	44
Nasal breadth	31
Palato-maxillary length ..	60
Palato-maxillary breadth ..	71
Arcs: Frontal	136
Parietal	141
Occipital superior ..	68
Occipital inferior ..	47
Supra-auricular.. ..	295
Obelio-parietal ..	38
Jugo-nasal	114
Horizontal circumference ..	515
Minimum inter-orbital breadth	25
Occipito-nasal length	195
Occipito-alveolar length ..	205
Mandible-symphysis height ..	33
coronoid height ..	56
condylar height ..	51
Gonio-symphysial length ..	80
Inter-gonial breadth	96

Catalogue number.. ..	*B.*
Age..	Adult
Sex	♂
Inter-coronoid breadth ..	94
Inter-cordylar breadth, exterior	115
Inter-condylar breadth, interior	72
Breadth ascending ramus ..	33
Angle	110°
Basi-mental length	103
Ophryo-mental length	135
Height of jaw	85
Weight of jaw and skull ..	749
Weight of skull.. .. .	664
	R.L.
Length parieto-sphenoid suture	11.11
L. lacrymo-etam. suture ..	8 9
Choanæ, height	20
Choanæ, breadth	29
Length, floor of nasal cavity ..	52
Combined l. three molar teeth..	? 37
L. molars and pre-molars ..	? 52
Least distance between the temporal crests	106
Index: Cephalic	67·4
Vertical	70·5
Alveolar	99
Orbital	81
Nasal	70·5
Palato-maxillary ..	118·4
Facial (total)	91·2
Facial superior (Broca)	72·35
Facial superior (Kollmann)	52
Stephano-zygomatic ..	87·8
Gonio-zygomatic ..	78·04
Naso-malar (O. Thomas)	112·87
Dental (Flower) ..	52
Pterion-ossicles	R absent L absent
Tuber-maxillare	small
Inferior temporal crest..	blunt tubercle
Posterior jugal spine	bifid
Fronto-maxillary suture .	absent
Spheno-maxillary suture sub-orbit	absent

The Mythology *of* Wise Birds. By H. Colley March.

[with plates xiv and xv]

When the human race was young, when man's imagination was unfettered by any trammels of science, when his keen and watchful observation of things was yet inexact and emotional, it seems to have been a matter of course that all individual objects, animals, trees, the products of his industry, even the celestial bodies, should hold converse with him, should possess various kinds of knowledge hidden from himself, too conscious of his own weakness and ignorance, bewildered by his inexplicable destiny and by the strange phenomena that environed him.

But from the beginning it was birds who spoke to most purpose, whose information was most valued, whose words often conveyed irony as well as wisdom, and from the plain where, in common with all things, they used the vernacular tongue, they rose in distinction by three stages: (1) birds retained the power of speech when all other animals had grown dumb; (2) birds constantly talked in a language of their own, which, though man could not unaided comprehend it, he was able to learn either by instruction or by magic; (3) birds spoke no longer a language that man by any means could understand, but nevertheless their wise and eloquent action it was more than ever necessary for all men to observe.

Literature abounds in poetical allusions to the wisdom of birds, to the warnings they desire to deliver, to the tidings they are ever ready to carry. "We bear our civil swords and native fire," says Prince John ("2 Hen. IV," v, 5), "as far as France; I heard a bird so sing." "Curse not the king," says the Preacher, "for a bird of the air shall carry the matter" (Eccl. x, 20).

Such allusions are poetical only, but the voices that primæval man heard, primæval whether in time or only in civilisation, were as real to him as the visions he saw. The history of demonology conclusively declares them to have been neither romance nor make-believe.

It is not difficult to advance reasons for a belief in the superhuman wisdom of birds. Their very aspect is usually one of alertness and intelligence. To great keenness of sense-organs is joined a rapid nerve-response, so that they are quickly aware of coming change or danger. Able to extend their horizon by mounting far up in the air, and having a telescopic vision, their knowledge of the world is proportionately enlarged. Secret

indeed must be that "path which no fowl knoweth, which the eye of the vulture hath not seen" (Job xxviii, 7). They fly swiftly whither they will, and all countries are free to them; they follow the climate they love; they go away, and return at the end of many days, year after year, companions of the spring. "The stork knoweth her appointed times: the crane and the swallow observe the time of their coming" (Jer. viii. 7). By clearing the land of vermin and dead organisms they perform important offices that were early recognised and highly valued by mankind. They exhibit obvious sagacity in choosing a site for nests, which they construct with admirable skill. Some of them are acquisitive, and some have a taste for decoration. Many of them sing melodiously, and a few can actually imitate articulate language.

It was natural that, in different countries, men should have been attracted by different orders of birds. The grallatores, or waders, whilst they were esteemed throughout the Old World, were chiefly venerated in Egypt: and the same may be said of the accipitres, such as eagles, hawks, and vultures. The Columbæ were most admired in the East: and, of the passeres, the sub-order conirostres found most favour in Europe.

The waders are generally of migratory habit, active, running rapidly, and possessing great powers of flight. They have three long front toes and one hinder toe, which is sometimes very small. In association with the rapterial hawk and vulture, they "were the scavengers of the Nile valley, and man's existence depended on them" ("Egypt," Perrot and Chipiez, i. 64, 65).

The ancient Egyptians, in their evolution of a doctrine of immortality, made grallatores the symbols of their creed. The Bennu, *Ardea bubulcus*, a sort of heron, was sacred to Osiris, the god of agriculture. It was the emblem of resurrection, and betokened the rising again of the sun, the return of Osiris to the light. It was sacred also to the planet Venus, whose appearance, sometimes in the evening and anon as a morning star, was a sign of the renewal of life (Pierret's "Egypt. Dict.," p. 94). As represented in a chamber at Philæ, it rests on the branches of a holy tamarisk-tree that overshadows a tomb (Wilkinson, "Anc. Egypt," v. 262).

In a hymn of the XIIth Dynasty we read, "I am the great Bennu, who am in Annu [Heliopolis]. I am the creator of all things" (Davis, "Book of the Dead," pp. 54, 55). And we are reminded of the gigantic crane that waded on the primæval ooze in the cosmogonic legends of other lands.

The Bennu originated the conception of the Phœnix (φοῖνιξ) a bird that Herodotus had never seen except in a picture, where

"its plumage was partly red in colour and partly golden and as to outline and size very like an eagle" (ii, 73).

The story of the Phœnix springing anew from the ashes of a funeral pyre built by itself is of much later date, and it was firmly believed by the fathers of our faith. Lactantius (A.D. 300) composed a beautiful poem on this bird, and fully described its habits and glorious appearance. "Unica Phœnix," he writes, "unica, sed vivit morte refecta sua," and afterwards, discussing its reproduction, observes.—

> "Fœmina vel mas hæc, seu neutram, seu sit utrumque,
> Felix quæ Veneris fœdera nulla colit;
> Mors illi Venus est, sola est in morte voluptas;
> Ut possit nasci, appetit usque mori."

Whether masculine, or feminine, or neither, or both, happy is it to need no marriage. Its Venus is Death. Its lust and delight are to die, that it may be born again. And Rufinus, who lived a hundred years afterwards, uses the story as an argument in support of the Incarnation. "Why," he asks, "should it seem wonderful that a virgin should conceive, when the Eastern bird appears to be born or reborn without a consort? for he is always only one, and ever succeeds himself by birth or rebirth" ("In Symb.," p. 548).

In the catacombs at Rome, the Phœnix, with a nimbus round its head, is perched on the boughs of a tree by the side of St. Paul: and on the ancient basilica of the same apostle a sculpture of it, inscribed with its name, appears over the doorway.

The Egyptians, who bestowed so much care and cost upon their sepulchres, nevertheless believed that the two most important parts of a man did not remain in the tomb, namely the *ba* and the *khu*: and these they always represented in the form of grallatorial birds. Their conception of the *ba* closely corresponded, Wiedemann thinks, to our "soul," for it was a being which, on the death of the man in whose body it had dwelt, left it in order to fly to the gods to whom it was akin, and with whom it abode when not united to the man. But it was neither immaterial nor able to dispense with food and drink. Sometimes the *ba* bore, in funerary paintings, a human head: and sometimes, too, it was furnished with human hands ("Egypt. Doct. Immort," Eng. Trans., p. 42). Hence probably, originated the sirens and harpies as figured by the Greeks. The Egyptians often depicted the *ba* as a bird flying down from heaven with the *ankh*, the symbol of life, in its hand, and approaching the burial-place to visit the mummy, or as flying down into the vault, with the offerings it had found at the door of the tomb, carrying bread in one hand and a jar of water in

the other, food and drink for the body that once invested it (*Ibid.*).

A drawing of the bird is given in "Beni Hasan" (iii, Pl. II, Figs. 3, 10). It has no human features, but is entirely grallatorial in appearance (Fig. 1). Mr. Griffith calls it a plover, and says that the hieroglyphic value of the root *ba* is a soul in bird form, and that it was probably at one time the name of an actual bird. He further points out that the pictorial signs usually, but not always, show a coloured feather or tuft projecting from the front of the bird's neck, just below the head, or sometimes from the breast.

I venture to think that the projection is really not a tuft of feathers, but the reminiscence of a pouch such as that which "hangs down like a dew-lap" in front of the neck of some cranes of India and Africa, and which they are capable of inflating. In the Argala, this pouch falls about a foot (Fig. 2): in the Marabout, it is much shorter. These birds are very voracious, and assist vultures in clearing away garbage from the vicinity of negro villages (Dallas). And it is noteworthy, as regards the functions of the *ba*, that some birds of this class feed their young by inserting their bills into the chick's mouth and disgorging some of the half-digested food from their own stomachs. Herons and storks can also disgorge food.

This conjecture is supported by the figure of a bird on a vase found at Ialysos, in Rhodes, as given in "Primitive Greece" by Perrot and Chipiez (ii, 377). Here the bird is a well-marked grallator: and it has, protruding from its breast, an unmistakable pouch (Fig. 3). If we follow its Egyptian analogies, we may regard it as representing "a soul," and may further suppose that the crane-like animals that abound on Mycenæan vases (Fig. 4) are "souls" also, and not "solar geese." Their mythology in these ceramic pictures appears to be connected with a world-octopus, whose outstretched arms extend through the universe.

The other important portion of a dead man that did not reside with him in the tomb was the *khu* (or *ikh*), represented by a highly conventionalised crested ibis. This bird also is drawn in "Beni Hasan" (iii, Pl. II, Fig. 4); and Mr. Griffith remarks that the hieroglyph occurs with the meanings (1) brilliant, excellent, useful, and (2) the glorified spirit of a man after death. Others have translated it "the luminous or shining one," "the intelligence," "the soul." The pyramid texts reveal that the *khus* of the gods lived in heaven, whither went the *khu* of a man after death. We read, "He standeth among the *khus*;" "Give him his sceptre among the *khus*;" "Horus hath given thee his eye to strengthen thee withal, that thou mayest

prevail among the *khus*." And we are reminded that, of all our faculties, vision is the sense of intelligence. Woden gave one of his eyes to buy for man a draught of knowledge from the Brook of Wisdom.

In the "Book of the Dead" (ch. xcii) the deceased prays for the liberation of his *ba*, his *khaïb* or shadow, represented by a sunshade, and his *khu*, from those who fetter *bas* and *khus*, who shut in the *khaïb* of the dead, and who shackle the limbs of Osiris ("Papyrus of Ani," Budge, pp. 117, 319). And elsewhere (ch. xci) is a formula to enable the *khu* to pass from the tomb to the habitations of Ra and Hathor (pp. 115, 319). And again we read, "I am provided, I am a *khu* provided; I have made my way to the abode of Ra and Hathor" (p. 115); "I am a *khu* furnished with what I need" (p. 319).

The Ibis itself is migratory, taking long journeys every year, but always returning to the place it left. It is strictly monogamous and most affectionate towards its mate and its young. It is fond of pure, fresh water; and accompanying, it seems to herald, the annual overflow of the Nile.

Is it possible for us to distinguish between two such conceptions as the *ba* and the *khu*? Is Pierret right in translating them "mon âme et mon intelligence"? Do the French words imply a sufficient diversity of meaning? Ought we not rather to follow the difference between the ravenous Argala and the dainty Ibis? The *ba* and the *khu* would have been designated by Aristotle the ψυχή and the πνεῦμα, the nutritive soul and the rational soul; and St. Paul might have called the *ba*-bird the σῶμα ψυχικόν, and the *khu*-bird the σῶμα πνευματικόν. In the nutritive soul arose organic cravings, whilst the rational soul was the seat of intellectual processes. The *ba*-crane busied itself in carrying food and drink to the mummy; the *khu*-ibis provided itself with mystical information and protective formulæ for its long and perilous journey to the abode of the gods.

A similar distinction may be perceived between the two wise ravens of Woden, that were called Huginn and Muninn. The name Huginn is from the noun *hugr*, "the intellect," and the verb *huga* is "to mind, attend to, think out;" whereas Muninn is "the mind" in the sense of "longing, love, delight." "Woden's two ravens," says "Grimnis Mal," "fly every day over the mighty earth. I fear for Huginn lest he never come back, yet for Muninn I am more fearful still." In other words, "the thoughts of Woden range far indeed, yet not so far as the wandering of his desire." "There flew two ravens," says the "Voluspa," "from Woden's shoulders, Huginn to the gallows, Muninn to the carrion." And here carrion represents carnal

appetite, the devouring of slaughtered foes; whilst the mystic gallows, of which Woden was lord, is the symbol of justice and self-sacrifice.

Before leaving the grallatores, let us remember, first, that in Germany storks have always been venerated for their kindliness and wisdom. Happy is that man on whose house they build, for to him they bring promise of children. And, second, that cranes are remarkable for their vigilance. When a flock of these birds goes to sleep, one of them remains awake to watch over the common safety. Long ago, in Scandinavia, cranes were kept by sea-rovers, for the sake of the warning uttered by those birds on the approach of strange vessels, or animals, or men, when they raised a prodigious uproar, the *κλαγγὴ γεράνων* of Homer ("Iliad," iii. 3). Amongst the contents of the ship-tombs of Sweden, that belong to the Bronze Age, are usually to be found the bones of the crane (Stolpe).

The raptores are good scavengers. Some of them are acquisitive, and even vultures have been known to steal highly coloured objects. They are kind to their young, and defend them with great courage. Their wisdom has received general recognition. On the Nile, the hawk was the sign of Ra, to whose priests it brought a sacred book of ritual. In like manner the eagle of Krishna recovered the lost volumes of knowledge. An eagle was the chosen messenger of Jupiter. Its fierce flight towards the solar heat associated it with the sun and with fire. It stood in apposition with the bolts of Jove, and was an attribute of Thor the Thunderer. On the highest summit of Lycæos, a mountain of Arcadia, was an altar to Zeus, in front of which, towards the east, were two pillars bearing eagles. Throughout Greece the eagle was sacred to him; and a golden image of this bird was found in the third city of Troy (Schliemann, "Ilios," p. 503).

The Egyptians painted on the ceilings of their homes and tombs the outspread wings of a vulture, and regarded it as a maternal emblem of protection and preservation. Mr. Flinders Petrie says, "There is perhaps no sight in the animal world more imposing than one of those birds stretched out with a span of some 9 or 10 feet, hanging overhead in the air; and not being hurtful, the vulture came to be honoured as a type of maternal care" ("Egyptian Dec. Art," p. 111).

In the "Adventures of Sanehat," an Egyptian tale of the XIIth Dynasty, it is related that "the king Se-hotep-abra flew up to heaven and joined the solar disc; the follower of the god met his maker; a hawk soared with his followers." This account, which Mr. Petrie regards as indicating a serious popular belief, would almost seem to be intentionally poetical,

like the exclamation of St. Dunstan over the blessed Edgitha. "Soon shall this beloved bird take its flight to God." On the other hand, we find in the "Book of Lismore" a passage that describes "the preaching which Elijah is wont to make to the souls of the righteous under the tree of life in paradise. Now when Elijah opens the book for the preaching, then come the souls of the righteous in shapes of bright white birds to him from every part." And we are told by Florence of Worcester that from the innocent head of the murdered boy-king Kenelm a milk-white dove, *lactea columba*, with golden wings, flew to heaven.

The case of the Owl is full of difficulty. In Egypt this bird was altogether rejected as ill-omened and unclean; and the Arabs still hold it in abhorrence. Hipponax (B.C. 540) considered it as the herald of death, and in later times its presentment was accounted good against the evil eye. Though it cares for its young, it builds no proper nest, and it exhales a disagreeable and unwholesome smell. Those persons who think that its aspect suggests wisdom may be referred to the remarks of an eminent naturalist (Dallas, "Animal Kingdom," p. 617), who says, "Its eyes, of extraordinary size, are fixed in the orbits in such a manner as to look directly forwards; and its peculiar vacant stare when exposed to the light of day gives it a most ludicrous appearance." Yet this foolish bird of ill omen, with rank odour and fœtid breath, was made an attribute of Pallas Athene, and was sacred to Minerva.

Can any explanation be offered? Schliemann found, in the third and fourth cities of Troy, a great number of what he called "owl-headed" vases; and he believed that they were imitations of that bird and were intended to represent an owl-headed divinity, even Athene Glaukôpis herself. He fortified his belief by the analogy of Hera Boôpis, who had, he considered, not only the soft, beautiful eyes of an ox, but the actual unlovely head of a cow. And it is a fact that cows were sacrificed to that goddess. On the other hand, it is certain that the owl was never sacrificed to Athene, whose offerings were rams and bulls and cows. And an examination of a long series of the so-called owl-headed vases has conclusively shown not only that they bear the characteristics of a woman, as Schliemann himself pointed out, but that, contrary to his opinion, the head is human also.

It is true that γλαῦξ is an owl; but it is also true that by a coincidence γλαυκὸς means blue—bright, gleaming, cerulean blue. Blue-eyed races of men were called γλαυκόμματοι, and for this colour the Greeks had no other name; for κυάνεος was their dark-blue. But no tinge of blue can be seen in the shining eyes of the owl.

On the whole, Professor Savce is probably right in supposing that this goddess of predominant maternal characteristics, mistaken by Schliemann for an owl-headed divinity, was she of the East who went under the various names of Atê, Atargatis, Kybele, Ma, and Omphale, and who was originally very different in kind from Athene, the virgin goddess of war. And we may perhaps surmise that the intensely owlish physiognomy of these barbarous fictile faces, that deceived Schliemann, likewise misled the early Greeks, so that when the coalescence of Atê and Athene took place a veritable owl was represented as the latter's attribute. It was the goddess and not her bird, who was wise and gracious and brave.

As poetic licence has, in some cases, given to swan-maidens a plumage of dove's feathers, so artistic error may be responsible for transforming the highly prized cranes of the North into "swans and solar geese," though this change can hardly explain the regard paid to the Brahminical goose in Ceylon. Herodotus (ii 72) mentions the χηναλώπηξ, a species of duck, as sacred to the Nile. Judging by representations of offerings to the dead, we must believe that the ancient Egyptians used the duck as a favourite article of food. Geese are good guardians, as they awake at the slightest noise. They are known to be highly sensitive to the delicate tremors that precede an earthquake. The Roman capitol was saved by them. They can become personally attached to human beings, and instances are recorded of their having acted as guides to blind persons.

Before passing on, it may be noted that the early inhabitants of Latium had an ancient oracle of Mars at Tiora Matiene, where responses were delivered by a woodpecker (*picus*); that the wren, a bird of similar habits, is revered for its wisdom in the Isle of Man; and further that the gift of prophecy was possessed by the Simurgh, the mythical bird of Persia.

Whatever recensions the Kalevala may have received, its thought is eminently primitive in cast, and it is especially valuable as coming from Finns, a people who were adepts in sorcery and the heirs of Eastern magic. In this epic all manner of things are gifted with speech. A ship, with the voice of a girl, complains that she is left to rot in the docks, and declares that she would rather be a tree again, with squirrels on her boughs. She was the magic barque built by the imperturbable Wainamoinen after he had obtained from Sampa timber wherewith to construct the stem and the keel. To this end, Sampa came to a poplar, twenty feet high, and was brandishing his axe, when the tree exclaimed, "What dost thou want of me?" Sampa replied, "I desire to construct a boat for the Father of Spells." But the poplar rejoined, "The ship made of

me would leak everywhere and go to the bottom. For my bole is full of perforations. Thrice this summer has the worm that hides under my roots eaten into my core." Thereupon Sampa approached a pine, forty feet high, and striking it with his axe, inquired, "Canst thou serve to build a boat for the Father of Spells?" But the pine answered, "Thou mayest not make a six-clinkered barque of me, for I am too unlucky. Thrice this summer the raven has croaked from my summit, the crow cawed from my branches." Then he put his question to an oak, sixty feet high, and the oak gave him a proud answer and said, "Assuredly you can make a stem and a keel for a ship of me. For I am neither ungrown nor unseasoned, and in my trunk there are no holes. And as for good omens, thrice this summer, during the days of utmost heat, the sun has covered me with his glory, whilst the moon has glittered on my crown, and birds have nested in my boughs."

Then Sampa felled the oak, and cut it up into planks and brought them to the Father of Spells. And he, as he joined the timbers by means of magical utterances, all at once forgot three words; and he deeply pondered where those words could be found unless on the head of swallows, on the neck of swans, on the back of geese. But though he slew heaps of such birds, not a single word, nor the half of one, could he find. Again profoundly musing, he thought the words might be discovered under the tongue of a summer reindeer, or in the mouth of a white squirrel; and he killed many of those rare animals and found, indeed, a hundred words; but not one was of any use.

Then he visited the regions of the dead, and besought the faery daughters of the Isle of Manala to tell him the three grand magical words. But their queen-mother not merely refused her aid, but did her utmost to ensnare him. And it was only by taking the sinuous form and the seaweed colour of a serpent that he was able to escape through the meshes of her enchanted net.

Ultimately he contrived to get himself swallowed by Wipunen, a giant sorcerer, and, by setting up a forge within his body, so wrung him by intestinal pain that he incontinently uttered all he knew, and disgorged the long-sought spell.

Talking trees were by no means confined to Finland. The Chaldæans had a sacred pine that declaimed its wrath: and the ilex groves (*φηγόι*) of Epirus, the speaking oaks (*αἱ προσήγοροι δρύες*), told Ulysses the will of Zeus.

As a general rule the objects that talk in the Kalevala, as the preceding extracts have shown, repeat the commonplaces of rustic lore; but a somewhat higher sort of wisdom may be

perceived in the speech of *birds*, who seem to be the only animals whose remarks are distinctly ironical.

"Alas!" exclaimed the young girl Osmotar, "the beer that I have brewed is bad." A redbreast chanted from the tree-top, a thrush sang from the point of the roof, "No! the beer is good to drink: but it ought to have been brewed in a barrel and kept in a cave. And the barrel should be made of oak and bound with hoops of copper."

The queen Pohjola changed herself into a dove, and approached Ilmarinen's forge. "What dost thou here?" asked the smith as the bird alighted on his window. "I have come to bring thee tidings," was the reply. This reminds us of the Irish legend of St. Brenainn (A.D. 500) who had remained in church after mass when the clerics were gone to the refectory, and he saw on the window a radiant bird, which came in and sat on the altar. "A blessing on thee!" said the bird. "May God bless thee," said Brenainn, "but who art thou?" "Michael the angel," replied the bird, "come to make music for thee, and to commune with thee." Under A.D. 806, The Four Masters say, "It was in this year that the birds used to speak with human voice."

A finch, chanting from the bushes, told the son of Kalervo, who was in trouble, that it was time for him to eat, and a crow, with its harsh voice, said to him, "Why art thou cast down? Take a twig of birch and drive the cattle into the marsh."

Once upon a time the earth was covered with forests, but no cereals would grow: and when the dauntless Wainamoinen was sorely perplexed thereat, a tom-tit chanted from a tree, "Neither barley nor oats will thrive unless the trees that overshadow the land be cut down and burned with fire." Then Wainamoinen felled all the trees but one, a beautiful birch, that birds might roost thereon, and the cuckoo sing from its summit. And lo! an eagle, flying across the sky, asked why this tree had been spared, and thought so well of the reason given, that he fetched fire to the trees that lay on the ground, and they were reduced to ashes. Moreover, a cuckoo came to the birch and sang the praises of Wainamoinen.

This curious action of the eagle was consistent with that bird's associations. The joyous Lemminkainen on one occasion found his course obstructed by a cataract of fire, in which was an island of fire, where stood a rock of fire, and on its summit was an eagle of fire, from whose mouth issued flames and whose plumage blazed like stars. On returning home to his mother, the joyous Lemminkainen found that her house had been burnt to the ground, and its very ashes scattered by the wind; and he sought information of an eagle that happened

to be hovering in the air. The careless bird had forgotten all about the matter, but concealed its ignorance by saying, what was not the fact, "Your mother is dead; she has perished by the sword."

On another occasion, the position of these worthies was reversed, and the mother of Lemminkainen, seeking her lost son, demanded him of the trees. These, both pines and oaks, said, not unreasonably, "We have trouble enough of our own without thinking of thy son. We have been created by a cruel destiny for days of sorrow: we are felled and dismembered for food and fuel; we are burnt up to clear the very ground we stand upon." Then she addressed herself to the road, and the highway replied, not without justice, "I have too many troubles of my own, always torn by wheels and lacerated by heavy feet, to care for thy son." And when, next, the moon was appealed to, she also could attend to nothing but her own sufferings, shining solitary through the bitter cold of interminable winters. But the sun told her that the dead body of her lost one lay in the dark waters of death. So, with a long grapnel, at infinite pains, she succeeded in bringing to bank a few fragments of her boy. And when she beheld them, she wept and exclaimed, "Is it in any wise possible that from these torn remains can come again a man and a hero?"

A raven who heard these words promptly replied—mark the irony—"No! a man can never be restored from what has been so cruelly lacerated. Why, a trout has eaten the eyes; a pike has devoured the shoulders. Cast thy son again into the waters, and perhaps he will there become a walrus or a whale."

We come now to another phase of thought, where birds alone spoke, and where men did not understand their language as a matter of course, but had to learn it by instruction or by magic. We find it in Esthonia, whose legends contain allusions both to the Finns, and to Finnish myth. One of the old Finnish and Esthonian gods was Ukko, lord of the air, who had three daughters, two of whom, Linda and Jutta, were queens of the birds, whilst Suura was a blue bird herself. We read of a maiden that, "as luck would have it, she had learned the language of birds from her mother when she was a child. A raven was sitting in the branches of a pine, preening its feathers, and the girl called to it, "Dear bird of wisdom, come to my aid." "What help dost thou need?" asked the raven. "Warn the king's son of the misfortune that has befallen me." The raven promised to do so if it could find any one who knew its language. Towards evening the voice of the raven was heard croaking on the top of the pine, and the anxious girl

hastened to inquire what tidings it had brought. The raven had had the good fortune to meet with the son of a magician in the king's garden, who thoroughly understood the speech of birds; and the message was that the maiden must not sleep on the ninth night, for a deliverer would then appear to rescue her; and on the ninth night the prince himself rode up, and lifted the damsel into the saddle behind him. And presently in the dawning light the birds woke up and began to sing: and if she had only listened to their warnings they would have profited her more than the sweet words of her lover, which alone she heard. And so it came to pass that the maiden, pursued by her mother's malevolent sorcery, slipped from the horse and disappeared beneath the surface of a stream. The unhappy prince went for aid to the dwelling of some spinsters of gold; and they gathered magic herbs and rubbed them with flour into a dough, and baked it for him, and he ate it at night. Thus was he made to understand everything that the knowing birds *say to one another*, for they are gifted with much wisdom that is hidden from man. And the prince rode away into the wood, and listened to the birds as they talked of the affairs of persons who were unknown to him. But presently a thrush began to speak of the stupidity of men who cannot understand the simplest things. "Here is a damsel who for a whole year has lain in the river in the form of a water-lily, and no one has been able to release her. Even her lover has passed by and heard her voice, and was none the wiser." "And yet," said a magpie, "the maiden was punished for his sake." "She could easily be set free," continued the thrush, "if the matter could be explained to the old magician of Finland." By-and-by the prince heard one swallow say to another, "Let us go to Finland, where we can build our nests better than here." And the prince begged them to carry a message to the sorcerer. In a week's time, having heard nothing, he was afraid the swallows had forgotten him, when a great eagle circled above him high in the air and presently descended and alighted upon a lime, and delivered to him full instructions from the old magician in Finland. But the task laid upon him was so hard, that days passed by, and still he lacked courage for the enterprise. At length a crow said to him, "Why dost thou neglect to follow the old man's advice? He has never given false information, and the language of birds never deceives."

In another story we read that a white bird perched on the ship, and the wise Finn, who knew its language, asked for tidings of the boy; and the bird answered that he had wandered away into a beautiful country and would never return.

And again, a young man sought counsel of a great magician

of the East, who said, "Men have but little wisdom. God's birds are thy best guides, if thou wilt learn their language." And he prepared a potent charm by boiling nine kinds of magic herbs which he had gathered by moonlight, and he made the young man drink of it every day, and then the language of birds became clear to him. And so wherever he went he had company, for he understood their speech, and many things were revealed to him which human wisdom could never have discovered; *and they led him whither he wished to go.*

From Esthonia we pass to Scandinavia, and there too we find Finnish influence. Even as Hiisi, an ancient god of the Finns, was represented on horseback preceded by a bird, so the mounted Woden follows the flight of a raven. The birds were path-finders. With ravens, indeed, Woden was closely associated. He was called Hrafn-áss, or Hrafn-góð, the Raven-god; Hrafn-stýrandi, or Hrafn-dróttinn, the Lord or Ruler of Ravens; Hrafn-fleistaðr, the Raven-friend; and Hrafn-blætr. This last epithet has been generally mistranslated the Sacrificer of Ravens; but its correct meaning is the Raven-hallower, he who, at a special sacrifice, devoted or consecrated ravens to the discharge of some particular function.

In the Landnamabók we read about one "Flóki, son of Vilgerð, who was a mighty Viking. He made ready to search for Snjóland [in Iceland], setting forth from Rogaland [in the district of Stavanger]. At that time they lay in Smjorsund. He provided a great sacrifice, and hallowed—*blotuði*—three ravens to show him the way." Lawman Hauk, who A.D. 1300 wrote a recension of this book of Ari's, adds, "because mariners in the North had then no loadstone," forgetting that seamen were accustomed to steer by the stars. The true reason is that Flóki was ignorant of the precise location of Iceland, and was obliged to adopt a well-known plan for finding it out. The narrative proceeds: "They raised a cairn where the sacrificial feast had been held, and called it Flóka-varða—Flóki's beacon. It is at the junction of Rogaland and Hordaland. He fared first to Hjaltland, and lay in Flóka-vagi—Flóki's bay. There in Geirhild's fjord was drowned Geirhild, his daughter. [These places are probably now Flekkefjord and Kvinsdal fjord.] In the ship with Flóki was one Faxi, a Hebrides man. Thence Flóki sailed to the Faroe Islands, and there he gave in marriage one of his daughters, from whom came Thróndr of Gata. *And from there he sailed out to sea with the three ravens that he had hallowed in Norway.* And the first which he let loose returned to the prow. Another, having flown up into the air, also came back to the ship. But the third flew away in that direction where presently they found land. They came

eastwards to Horn, and sailed along the southern coast: and as they drew west to Reykja-nes the firth opened out, so that they saw Snæfells-nes. Then said Faxi, 'This is a great country that we have found, and here, too, is a big waterfall.' And this was afterwards called Faxa-óss."

We cannot doubt that the birds were liberated in succession after considerable intervals of time, the ship still holding a northerly course: and that when the last raven rose up in the air, and the horizon receded from its view, then all at once the bright gleam of the snow-clad mountain caught its eye, and it flew straight to the shore.

It is noteworthy that the great diluvial legend, however it originated, contains many realistic details, such as the use of bitumen for caulking the ship. The Mosaic account is perhaps a little less intelligible than that of the Chaldæans, but both heroes adopted the same method of ascertaining the proximity of land. They both employed a dove and a raven, but Izdubar also a swallow. A raven will fly towards the first land it sees, and a dove or a swallow makes for the home it knows. The raven of Noah went forth to and fro until the waters were dried up from off the earth, and the dove did not at last return (Gen. viii, 7): whereas Izdubar's dove came back, whilst his raven went forth, and saw the decrease of waters, and wandered away and returned not (George Smith, "Chald. Account of Genesis," p. 270).

The wisdom of the conirosters was recognised of old in all countries. Ravens assemble from enormous distances round any supply of food, led, it is believed, rather by their powerful sight than by their sense of smell. Birds of the crow family will, even in a state of nature, mimic the voices of other animals, such as the lamb, the kite, the owl, the cat; and in confinement they will imitate the barking of a dog, the grating of a saw, and the human voice, of which they can be taught to repeat a few words. They have much curiosity and love of mischief, and will steal and secrete glittering objects: they have been known to bring food for days together to a wounded dog: they have a keen perception of the approach of danger, and give warning of it to their friends. Thus the Buphagine, or Ox-peckers, of Africa, who extract the larvæ of bot-flies from the backs of horned cattle, to the great delight and relief of the latter, have such an understanding with their four-footed companions, that though with a domestic animal they allow man to come very near without any alarm, yet for a wild animal they give a signal of danger at man's distant approach ("A Breath from the Veldt," J. G. Millais).

We cannot be surprised, then, that Pallas Athene, at Corone

in Messenia, bore a crow in her hand; or that this bird was an attribute of Apollo, and rested upon his lyre; or that ravens brought bread and flesh to a prophet of the Jews. On a Gnostic gem is a nude god holding the bay-branch of Apollo, associated with a crowned bird who bears a caduceus, and whom a Hebrew inscription calls a raven. Ravens are frequent on Mithraic monuments, and the corax was a figure that served in the rites of a Mithraic cave, where the superior priests were called lions, and the inferior ravens. Hence the rites themselves were designated as Leontica and Coracica. Indeed, these birds are everywhere spoken of as full of wisdom. "Hornkloffi's Raven-song" tells of "a fair-haired, white-throated damsel who had the look of a wise Walkyrie that despised wedlock, a keen Finnish maid who knew the tongue of birds" (Corp. Bor. i, 256). The "Lay of Righ" narrates how his sons grew up and "busied themselves with breaking horses, rimming shields, smoothing shafts, and planing ash-spears. But the youngest of them knew hidden things and the secrets of life. He could [of course by magic] blunt swords, and still the sea, and understand the language of birds" (*Ibid.* i, 242).

Sigurd, who had killed the serpent Fafni, the guardian of a gold-hoard, and was roasting the monster's heart for Regin, the serpent's brother, burnt his fingers and hastily put them to his lips; and when he had tasted the dragon's blood, immediately he understood the voice of birds. And some that were in the tree overhead happened to be conversing about him and his prospects, and he profited greatly by what he then heard.

Atli was helped by a talking bird, who asked, "Hast thou seen Swafni's daughter, the fairest maid in this happy world?" "Say on, thou wise bird," said Atli. "I will," responded the bird, "if I may choose what I like out of the king's palace." "Yes, only choose not his sons, nor their wives" [for that would mean their death]. "No! I will choose temples, and high altars, and horned kine." The allusion is to the great slaughter that took place at sacrificial feasts, when birds of prey greedily devoured the offal. At such a banquet was engaged "the poll-feathered raven, sworn brother of the eagle," who, when a question was asked him, "shook himself, and wiped his beak, and made answer."

But to fatten on human flesh was their chief delight. "Quoth a raven to a raven as he sat on a lofty bough, 'Some tidings have I for thee. This newly born son of Sigmund hath eyes that flash like a hero's; a friend of the wolves is he, so we may be of good cheer.'"

Woden was the ravens' friend because he gave them the slain bodies of his foes. They were called "his swans, whose wine

was blood." The exultant hymn of Lodbrók, a Scandinavian king, sings how "we dealt wounds for yellow-footed fowl and for famished wolves; we gave the falcon its full, and made it our guest at the battle. Glad grew the brethren of the hawk, and a bloody prize was given to the raven." Indeed, war was so frequent, and burial of the slain so rare, that birds of prey acquired a new instinct and gathered together at the mere mustering of men, at the sound of their voices and of the clash of their arms as they marched.

The civilisation of the Baltic races ever lagged behind that of the Mediterranean, and was late in reaching the conception, long before attained by Grecian thought, that while birds, who themselves were great travellers, might by their own migratory skill guide men on their way, yet in revealing other kinds of knowledge they were only the intermediaries of the gods. Xenophon, in his "Recollections of Socrates," affirms that "those who consult omens do not imagine that birds know what is advantageous for them: but that the gods, by such means, rightly signify what will be so. People allege that they are instructed by birds: but Socrates declared that the admonition came from the divinity" ("Xen. Mem.," I, i, 3, 4).

But the lively scepticism of some of Xenophon's contemporaries was disposed to go a little beyond what was reasonable, and the critical temper as well as the gross credulity of the time, four hundred years before Christ, was wittily displayed by Aristophanes. Two men come upon the stage in search of a habitation. One of them is guided by a crow, the other by a daw. *Euelpides*: "We *must* go forward to yonder tree." *Pisthetairos*: "A plague on thee and on thy bird! Mine commands us to go back. To think that, at the mercy of this vile crow, I should have gone already more than a hundred miles!" *E.*: "Ay, and this daw has led me by the nose till scarce a shred is left on my sandals. Look at this fowl of mine! How he yawns and stares about him." *P.*: "And mine snaps his beak in disdain." *E.*: "When Priam was introduced on the stage he was always attended by a bird." *P.*: "And Zeus carries an eagle upon his head, and his daughter an owl, and Apollo a hawk." *E.*: "By Ceres, 'tis true. But why is this thus?" *P.*: "Why? In order that when men sacrifice, and submit the entrails of the victims to the gods, the birds may have the first picking of them, before even Zeus himself. Birds point out to those who consult them mines and minerals, and show their diviners how to make commerce lucrative, and tell mariners when to sail. And they discover to men treasures of silver which their ancestors hid in the ground, for they always know where such things are concealed; as the proverb says, 'No one knows of my treasure but

the little bird.' Art thou aware that that croaker the raven lives for five generations?"

And then the *Chorus* fills up the measure of derision: "When the crane takes her flight across the Mediterranean, 'tis seed-time, and the sailor begins to season his timbers. The kite tells you when to shear your sheep, the swallow when to throw off your warm cloak and buy a light one. No prediction can be made without the help of birds. In every sound, even in a sneeze, a bird's voice is detected."

These wholesome gibes may have served to open the eyes of those who were the blind spoil of priestly augurs, but they tended to obscure the fact that mankind had learnt much from the wisdom of birds, whose extraordinary powers of flight and vision had been used by seamen for the purpose of discovering the proximity of land or the direction in which it lay, and whose annual passage oversea necessarily proved to observant minds the existence and location of unknown countries. It is averred (Humboldt and Gatke) that in the Andes a condor has been seen flying at the height of 40,000 feet; and we are told that the northern blue-throat makes its way from Egypt to Heligoland, a flight of 1,600 geographical miles, in a single night.

The Columbæ remain to be considered. They have a reputation for conjugal fidelity. During the breeding season the sexes exhibit a most tender affection, and they produce two broods in the year. Their wisdom is chiefly shown by the faculty that some species possess of finding their way home from distant places. According to Darwin, the modern homing pigeon is descended from the Persian messenger dove, first brought to Europe by Dutch sailors. It has been said that at the moderate elevation of 430 feet a bird can see twenty-five miles ahead. This estimate is much too low. When the atmosphere possesses what meteorologists call "visibility," the unaided human eye, at an altitude of 300 feet, can easily detect coastlines across the sea at a distance of seventy miles.

It must be observed that the words *dove*, *culver*, *columba*, and κόλυμβος, all mean a diver or swimmer, and it is said that these names were bestowed on pigeons because of their "peculiar mode of flight." This is imaginary. Their mode of flight does not in any wise suggest the action of swimming or diving so forcibly as to single them out for a name from hawks, larks, seagulls, and all the fowls of heaven. They have, however, one distinguishing habit so peculiar as to warrant a generic designation. In their mode of drinking, they differ remarkably from all other birds, for instead of taking up a small quantity of water in the mouth, and then swallowing it by raising the head,

they immerse the bill in the water and drink without stopping till they are satisfied.

In reconsidering the etymology, we find that κολυμβάω may be used with the modified meaning "to dip," since Thucydides and Plato employ the stronger form κατακολυμβάω for "diving," and that the Eng. *dove*, the A.S. *dufa*, and the Goth. *dubo* have "dip" as well as "dive" for their congener. The A.S. verbs *dippan*, *doppettan*, mean "to dip," "to plunge," "to immerse." The A.S. *dop-fugel* is the moorhen, which is a true diver, as are the dipper, or water ousel, and the dab-chick, or little grebe, called in Dorset die-dapper. But the A.S. *dob-end*, or dipping-duck, is the gannet, which is quite incapable of true diving or swimming and takes its fish by flying over the sea and suddenly dropping upon any that come in sight. "Dip" and "dive" are therefore etymologically convertible, and doves are fowls that are named from the fact that they dip the beak in drinking.

By the Greeks doves were ranked with wise birds. Dionysius of Halicarnassus, who wrote in the first years of our era, states that oracles were obtained at Dodona through pigeons, which, sitting on oak-trees, revealed the will of Zeus (i. p. 12, Sylburg, as quoted by George Smith). Sophocles (B.C. 440) speaks of two oracular doves (Trachiniæ, l. 169), and Herodotus, who wrote a little before this, was told by the priestesses at Dodona that a black pigeon flew there from Thebes, in Egypt, and sitting on an ilex, proclaimed in a human voice that an oracle must be erected for Zeus (ii. 55). The word πέλειαι, here used both for the doves and their attendant priestesses, is the one employed for pigeons by most early writers, including Homer, Sophocles, Euripides, and Aristophanes. Its relation to the adjective πέλος, dusky or blue, led Herodotus to conjecture that the first priestess was a black woman. But the word could only show that the birds were of a bluish colour, like those we term rock-pigeons. Varro, the Roman, who wrote on agriculture about fifty years before Christ, distinguished three kinds: wild, tame, and mixed. The *misellæ*, or mixed, show us that already there was a tendency to the variation that is now so marked; the *agrestes*, or wild pigeons, were of a blue colour; and the *cellares*, or tame pigeons, were doubtless those which the Greeks designated by the term περιστεραὶ, used by Sophocles, Herodotus, and Xenophon, and exclusively by the Septuagint and in the New Testament. The dove-cote of Plato was ὁ περιστερεὼν.

Turning for a moment to Polynesia, it appears that in those islands birds were ever regarded as the special messengers of the gods to warn men of impending danger, each tribe having

its own feathered guardians (Gill, "Myths," p. 35). "Like the outstretched heavens," says a song, "are the wings of the warning bird. Ah! that long curved beak! 'Tis a chosen bird from some other land that comes to warn thee. Stand erect, ye divine ones, and say whence ye came." This invocation is probably addressed to frigate-birds, sacred in the Solomon group, in which the spirits of deceased men of renown were believed to dwell. In Manjara a species of blackbird was regarded as the incarnation of the god Moó, and led the way on marauding expeditions. A red pigeon assisted Mãui in the discovery of fire. Rori was guided by birds. "The cooing of doves [*kukupa*=a pigeon] was his music, a warning over his head. In pity they called to him, sent to save him by the spirit of the Wild Black Rocks."

In Captain Cook's happier days the natives tried to delay his departure, and besought the lord of the winds to send forth some bird to settle on his shoulder, as the expression of a divine wish that he should remain (Gill, "Darkness to Light").

A pigeon was the pet bird of Tangaroa. It was in reality one of the gods. It rested on the island of Atiu, and as it sipped the cool water at a grotto saw therein a female shadow of great beauty. The pigeon readily embraced the lovely form, and then flew away. The child thus originated was called Atia, "the first-born," and the natives of the island regard themselves as descended from the gods (*Ibid.*).

The amatory disposition and the fecundity of the dove made it a suitable associate for a goddess of love and maternity. In the East the favourite sacrifice to Istar, Astoret, or Astarte, was this bird. And it is a highly significant fact that young pigeons and turtledoves were sacrificed to Jahveh, under the Levitical law, as an atonement for the impurity of childbirth, whilst similar offerings were brought by the Virgin to the Temple at Jerusalem after the birth of Christ.

According to Hyginus, chief of the Palatine Library, a collector of mythological legends, and one of Ovid's friends, the Greeks thought that an egg fell from the sky into the Euphrates; fishes carried it to the bank, where a dove sat upon it and hatched out Aphrodite ("Fabulæ," 197).

Diodorus the Sicilian, a contemporary of Hyginus, relates that "at Ascalon, in Syria, is a temple dedicated to the famous goddess Derceto. She, having given birth to a daughter, thereupon in a paroxysm of remorse killed its father, abandoned the child, and destroyed herself. The infant was, however, preserved and nourished by a great flock of pigeons, who not only nestled upon her and kept her warm, but constantly fed her with milk, which they brought in their beaks from the shep-

herds' huts. When she was a year old they began to feed her with cheese; but the shepherds, finding their cheeses pecked out, followed the birds, and discovered a very beautiful child, whom they brought to the king's herdmaster; and he adopted her and called her Semiramis, a name derived from pigeons, which the Syrians ever after adored. In the end, she surrendered her throne to her son and disappeared metamorphosed into a dove, as if she had been translated to the gods, according to the words of the oracle of the temple of Ammon" (ii, 1).

On coins found in Cyprus, belonging to the Union of Cypriote Towns and bearing the legend Κοινὸν Κυπριών, appears the temple of Paphos, on which rest the holy doves of Aphrodite. Elsewhere, on sculptured monuments, they hover round goddesses; Astarte presses them to her bosom: priests and sacerdotal women carry them. They were encouraged to breed in sacred precincts. A terra-cotta model of a temple, found at Dali, has in its upper storey a multitude of pigeon-holes. A dove that was believed to be the messenger of Mohammed used to perch upon his shoulder. And to-day, in the courtyard of the great mosque at Mecca, are more than two thousand of these birds; and to feed them is the duty of all worshippers.

Here, then, we have a vast mass of popular belief and practice, of great antiquity, that confronted Christianity from its birth onwards all through the Middle Ages; and we may confidently expect, on *à priori* grounds, that a careful investigation will discover many examples of a religious overlap on points of resemblance: that the myth of wise birds has influenced, if not Christian creed, at any rate Christian iconography.

When we enter the catacombs of Rome we find that the dove, symbolically used, had several meanings. Usually it was the emblem of peace, for it often bears the legend PAX; and it often carries an olive-branch in its beak, reminding us of the promise to Noah, though it also recalls the Diluvian Hero's Wise Bird. The injunction, "Be ye harmless as doves," made them the sign of innocence; and the Virgin, with the inscription *Maria*, is placed in an attitude of prayer between two pigeons, not perhaps without a reminiscence of Semiramis. They appear to stand also for pious Christians, or for the souls of departed saints, since a dove is depicted as resting on each arm of the cross: and Tertullian (A.D. 193) calls the sanctuary *columbæ domus*.

Neither had the significance of the dove in relation to maternity altogether vanished from later times. The Immaculate Conception was often symbolised by a pencil of light that

streaming from a dove, as the Holy Ghost, fell upon the Virgin; and we read in the Blickling Homilies (A.D. 979) that "the Holy Ghost abode in the noble body, in the best of all bosoms, in the beloved storehouse; and in that holy womb He [the Holy Ghost] abode nine months, and then the queen of all maidens gave birth to the true Creator and Consoler of all men, the Healer of all the world, the Preserver of all spirits, the Helper of all souls, when the gold-flower came into this world and received a human body from St. Mary, the spotless Virgin."

During mediæval times, in both Eastern and Western Churches, a vessel shaped like a dove, and called a peristerion, was suspended before the high altar by a chain from the roof of the edifice. It opened on the back, and in the body of it was a depository for the Blessed Sacrament. In the year 370 St. Basil the Great reserved the Host in a dove made of gold: and in the year 474 Perpetuus, Bishop of Tours, left by will a silver dove to Amalarius, a priest. In England this receptacle was called a culver. One made of "latyn," a sort of brass, is mentioned in the churchwardens' accounts of St. Dunstan's, Canterbury, in 1500: and in 1596 a culver was repaired of the church of Kirton-in-Lindsey.

The etymological association of its name, gives the dove a special significance as a symbol of baptism, and may have been one of many reasons for its sculptured presence on dip-stones or fonts.

In mediæval bestiaries a white dove denotes the Holy Ghost, but one of a purple colour is declared to signify Jesus the Son of Mary; and the dragon is affirmed to be afraid of the doves upon the "Arbor pereclixion" or tree of life.[1]

It was at one time a common belief in this country, due doubtless to the sanctity of this bird, that an easy death was impossible on a bed stuffed with pigeons' feathers.

But the dove claims especial recognition in its character of a wise bird. We are told by Roger of Wendover, who relates the assassination of King Kenelm, that a white pigeon—*candida columba*—carried a letter—*charta quædam*—containing the news, to Rome, and dropped it on the altar of the blessed Peter. Every Good Friday the Sangreal was visited by a white dove, that, descending from heaven with an oblation, laid it before the holy vessel, which thereupon gave oracles in miraculous characters, that appeared for a few moments on the surface of the bowl and then vanished away. The dove was the sign of inspiration and of the endowment of tongues, and was especially

[1] "Arborem Pereclixion . . . dicunt a crudeli dracone tueri. Istiusmodi physici de columba docent." *Vita B. Columbæ Reatinæ.* Περικλύζω = washed all round (like an island).

chosen as the symbol of the Holy Ghost, whose seven gifts are all intellectual, namely, wisdom, understanding, counsel, fortitude knowledge, piety, and veneration (Isa. xi, 1, 2, 3). Accordingly, in the thirteenth and fourteenth centuries, Christ is represented as receiving inspiration from seven doves.

It may be objected that the chief function of the Holy Ghost is indicated by His title "the Paraclete" a word which is usually rendered "the Comforter." But the Greek term Παράκλητος arose in courts of justice and meant "an advocate." Further examination shows that the Paraclete was *to teach* all things—ὑμᾶς διδάξει πάντα—and bring things to remembrance. He was to convince the world of error and justice: ἐλεγξει τὸν κόσμον περὶ ἁμαρτίας καὶ περὶ κρίσεως. And ἐλέγχω is a word used of arguments and proofs, whilst κρίσις means trial as well as judgment.

The Icelandic New Testament translates Παράκλητος into *Huggari*, which is etymologically equivalent to Huginn, Woden's raven. Indeed, the overlap we are considering necessarily increased as Christianity interpenetrated the religion of our Teutonic forefathers. Augustine, the apostle of the English, died at Canterbury in 605; Ansgar, the apostle of the North, who was born in 801, was a German monk, who prepared an illustrated book, the "Biblia Pauperum," for the instruction of the unlearned. In this he taught that as the Law was given from the top of Sinai, so a new law was delivered, when fire appeared above the faithful, on the day of Pentecost. And in the Benedictional of St. Ethelwold, Bishop of Winchester, of the tenth century, fiery tongues of inspiration issue from the beak of a dove and stream upon the apostles.

One of the earliest renditions of St. John's Gospel into the Anglo-Saxon tongue, was made from the Latin, it is thought by Aldhelm, Bishop of Sherborne, who died in 709. The opening sentence runs thus: "In principio erat verbum, et verbum erat apud Deum, et Deus erat verbum." This was literally rendered: "In the beginning was the word, and the Word was with God, and God was that Word." Raw converts, ready enough from their preconceptions to regard the Holy Ghost as the Spirit of wisdom, whose symbol was a Wise Bird, naturally identified the Verbum with the Dove, and therefore with the Third Person of the Trinity. When the Lindisfarne version of the Gospel was produced, in 950, it is clear that an attempt was made to correct such a blunder, for the same Latin words were rendered, "In the beginning was the Word, and the Word, which was God's Son, was with God the Father; God was that word."

The writings of St. Basil the Great, of the fourth century, were

inspired by a shining white dove, that was seen to alight upon his shoulder; and a statue of the thirteenth century, in the cathedral of Chartres, shows a dove, with a cruciferous nimbus, resting on the shoulder of Pope Gregory and whispering in his ear (Didron, "Christ. Icon.," 1, 448).

Moreover, we may recognise the influence of Woden's raven upon the eagle of St. John; for the Evangelist is often represented, not in the form of an eagle, but in the company of one. In a "Manual of Painting" of the twelfth century, it is enjoined that "the semblance of the eagle must direct its gaze towards St. John, because it indicates the inspiration of the Holy Ghost." On the runic cross of Bewcastle, in Scotland, of the seventh century, an eagle on the wrist of St. John is apparently holding converse with him (Fig. 5), whilst on the runic cross of Ruthwell, of the same country and century, an eagle climbs the Evangelist's thigh to whisper its tidings (Fig. 6).

Worsaae, in his work on the "Industrial Arts of Denmark," says (p. 131), "The idea of a divine trinity must have been extensively diffused throughout the North during the Bronze Age." This conception of a trinity was, however, henotheistic; when any member of the triad was worshipped apart he was adored as supreme. The sign of Woden was the triskele: the trinity of Thor was suggested by representing him as a man with three heads; and the symbol of Frey was the solar cross, a token of omnipotence. On a runic stone in Gotland the Three are carved in a group. On one side is Woden, with his spear; in the midst is Thor, his divine son, begotten of Fjorgyn, Mother Earth; and on the other side is Frey, with a large bird, which bends its head over him. Worsaae calls this bird a goose, but it may well be a crane.

For a long period the Christian Church, in representing the Trinity, indicated the Father by a right hand, the Son by a cross, and the Holy Ghost by a dove. Full, personal effigies began to be made about the twelfth century, and became very frequent by the close of the fifteenth century. It has been observed by Didron that for one Italian or for two Romanesque examples there are thirty of Gothic origin. We see the group of Three Persons; and sometimes the Third has a dove resting on His head, as the crane once bent over Frey. At other times the Third Person grasps a dove by the feet, precisely as it was carried long ago by the priest of Aphrodite, or it is held aloft on the wrist like a falcon by a hunter (Fig. 7).

When the Holy Ghost does not appear personally in representations of the Trinity, but symbolically by a dove, then in the south of Europe the bird seems to be escaping from the mouth of the Father, or is seen with its wings "proceeding"

one from the lips of the Father and the other from the lips of the Son, who are therefore placed side by side.

But often in the North the dove stands at the Father's right hand (Fig. 8), or perches on His shoulder, or descends upon Him in flight (Fig. 9,) and in all cases approaches its beak to the Father's right ear: and so again suggests the verbum, the divine wisdom, the Wise Bird.

In Protestant countries few monumental relics of this myth are to be found except those that remain from pre-Reformation times; but in some parts of Sweden the figure of a dove still swings above the pulpit of the preacher, and in this country the support of the lectern continues to be an eagle of brass.

And we arrive, once more, at the old conclusion that many civilisations, many systems of religion, have contributed to the material and spiritual possessions with which "the heirs of the ages" have been endowed.

February 9th, 1897.

Description of Plates XIV and XV.

Fig 1.—Ba-bird, from the Fifth Memoir of the Archæological Survey of Egypt, "Beni Hasan," Part III, Plate II, Fig. 3.

„ 2.—Adjutant-bird, *Ciconia argala*, "Reptiles and Birds," by Figuier, pub. Bickers and Son, p. 358.

„ 3.—Bird figured on an amphora from Ialysus; "Mycænian ceramics". "History of Art in Primative Greece," by Perrot and Chipiez. Pub Chapman and Hall. Vol. II, p. 377.

„ 4.—Fragment of Mycenæan vase found near the Lions' Gate. "Mycenæ and Tiryns," by Schliemann. Pub. John Murray. Plate XX, No 195.

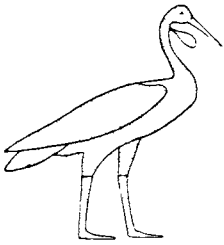
„ 5.—A group from the Bewcastle Cross. Stuart's "Sculptured Stones of Scotland," II, Plate XXIV.

„ 6.—A group from the Ruthwell Cross. George Stephens. Pub. John Russell Smith. Plate II, Fig. 2.

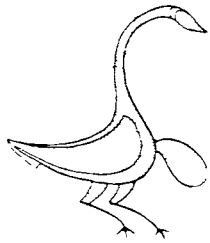
„ 7.—Sculptured group, interior tympanum of south door of Tarrant Rushton Church, Dorset. The stone is not architecturally *in situ*.

„ 8.—Sculptured group, exterior tympanum of south door of Pontorson Church, Normandy.

„ 9.—Sculptured group, west front of tower of Abbotsbury Church, Dorset. The stone is not architectually *in situ*.



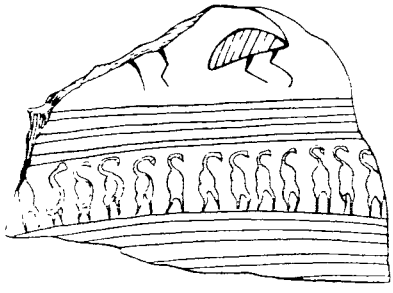
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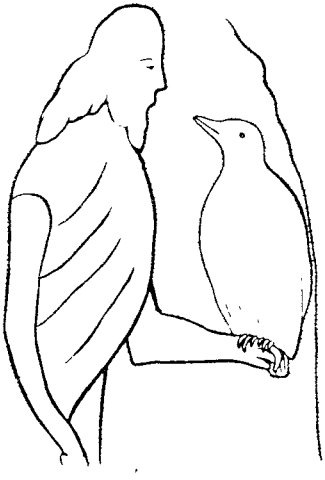
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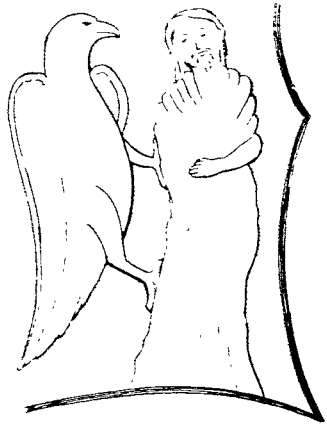
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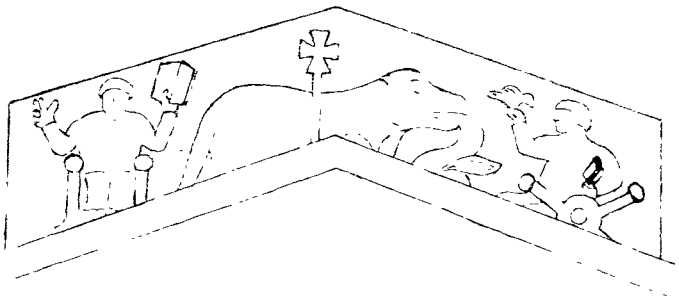
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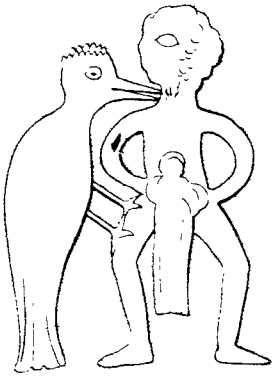
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On the Evidence *for the* Efficacy *of the* Diviner *and his* Rod *in the* Search *for* Water. By T. V. Holmes, F.G.S.

While the study of the normal has long been one of gradual and continuous progress, that of the various departments of the abnormal has hitherto been accompanied by very different results. For in the latter case we have had a tendency, not to the slow development and modification of views in accordance with increasing evidence, as in botany or geology, for example, but to an acceptance or rejection of the mass of real or alleged facts, with little or no sifting of details. An age unduly credulous of marvels is succeeded by another to which anything abnormal is considered contrary to common sense, and consequently as not needing any examination. In these oscillations we see those violent actions and reactions which invariably occur whenever the factors of public opinion are the feelings and preconceptions of men generally, rather than the comparatively dispassionate researches of scientific observers. And as the evidence for the abnormal is necessarily irregular in occurrence, and often peculiarly difficult to obtain at first hand, and its treatment, if obtained, depends to an unusual degree on the preconceptions of the individual obtaining it, we must long expect to find disagreements among the most careful and capable inquirers in this department, of a magnitude not to be met with in other fields of study.

The great development of natural science has made the second half of this century remarkable as an era of free inquiry into the various departments of the abnormal, as well as into other subjects. One result of this has been, that questions such as that of the alleged special powers of the diviner with his rod, in making the search for water a success, are fully and freely discussed, and various opinions expressed thereon in a scientific spirit, a quality till lately wanting in such discussions. And the diviner, instead of being looked upon by the mass of educated people as an example of lingering superstition, is now openly consulted by squires as well as by farmers, as paragraphs in country newspapers often testify. With one exception, however, I have not yet met with any account of the proceedings of a diviner from the pen of a field geologist, who would evidently be the most useful critic in such a case. For, even if much prejudiced for or against diviners and their rods, he would at least be able to note the geological character of the ground, and those circumstances generally, which are un-

likely to be noticed by other observers, yet which constitute the only evidence, favourable or the reverse, to the hypothesis of the possession of some special faculty on the part of the diviner. Of course, in the great majority of cases, the field geologist is very unlikely to know when these experiments are about to take place, as the diviner is usually consulted by persons, whether educated or not, who do not realise the bearing of geological knowledge upon questions of water supply. The following remarks are simply notes by a field geologist on various recorded cases in which diviners have been consulted. I may add, that to me abnormal sensitiveness to the proximity of water seems quite as *possible* as abnormal sensitiveness to the action of some special drug, or to the presence of some particular animal, of which many curious examples are known.

Mr. Andrew Lang, in "Custom and Myth," has a chapter on the divining rod. He remarks that in all countries rods or wands have been supposed to possess a magical power; but notes that Pliny (though extremely fond of marvels) when he describes the various modes of finding wells of water, says nothing about the divining wand. This suggests, to say the least, that water-finding by its agency was much rarer in Italy in Pliny's time than it is in England to-day. Mr. Lang points out that the Royal Society attempted to deal with the problem of the rod in 1666, but without success. This is not to be wondered at, as the philosophers of the seventeenth century did not particularly concern themselves with the real or alleged facts, though they devoted much thought to the formation of hypotheses to account for them. We learn that two centuries ago, ecclesiastics were particularly fond of using the rod in the search for water, and that "the Maréchal de Boufflers dug many wells and found no water, on the indications of a rod in the hands of the Prieur de Dorenic, near Guise." Mr. Lang also notes that while Bleton, the great water-finder of the eighteenth century, declared that the physical sensations of the searcher communicated themselves to the wand, the African theory is that the rod is inspired and influences the man; and that "Paramelle, who wrote on methods of discovering wells, in 1856, came to the conclusion that the wand turns in the hands of certain individuals of peculiar temperament, and that it is very much a matter of chance whether there are, or are not, wells in the places where it turns."

But the most important case, as evidence, mentioned by Mr. Lang, is that to which he refers as given in the "Quarterly Review" (vol. xxii, p. 374, 1820), but which he dismisses in a few lines describing the agitation of the diviner and the twisting of the rod in her hands. On consulting the "Quarterly Review"

in search of additional details. I learned that the lady in question (styled "Lady N." in the Quarterly, but known, Mr. Lang says, to have been Lady Milbanke, mother of the wife of Byron) had discovered her water-finding faculty at the age of sixteen. She was then on a visit to Provence, and the owner of the château at which she was staying, employed a peasant with a twig to discover a water supply, and she found, "to her amazement and alarm," that she had the same faculty. On returning to England she often exercised her gift, though in studious concealment. But when Dr. Hutton—the eminent mathematician, not the famous geologist of that name—published Ozanam's researches in 1803, where the effect of the divining rod is spoken of as absurd, "Lady N." wrote to him on the subject; and a few years afterwards she went at Dr. Hutton's particular request to see him at Woolwich, and, "she then showed him the experiment, and discovered a spring in a field which he had lately bought near the New College, then building. This same field he has since sold to the college and for a larger price in consequence of the spring." The narrator adds, *inter alia*:—"It is extraordinary that no effect is produced at a well or ditch or where earth does not interpose between the twig and the water." It is satisfactory to be able to add that the narrator is spoken of in the Quarterly as a person in whom the most implicit confidence may be placed.

The special importance of this case lies in the fact that the spot at which the "spring" was discovered, is sufficiently identified, and that there can be no doubt about the geological nature of the ground there. The "new college" is evidently the Royal Military Academy on Woolwich Common, at which Dr. Hutton was professor of mathematics (1773–1806). Now the surface of Woolwich Common between the Military Academy and the Artillery Barracks and Rotunda (northward) consists of Blackheath pebble beds; while from the Academy southward the pebble beds become covered with a gradually increasing thickness of London clay. Whether the spot at which the lady discovered the water had pebble beds at the surface, or they were covered by a few feet of London clay is immaterial, as water would be found only towards the bottom of the pebble beds. And as water percolates evenly and freely through them, and they are lying almost perfectly flat, water would be found thereabouts at very nearly the same depth wherever the pebble beds are uncovered, and at a greater distance from the surface as the thickness of the London clay above increased. It is therefore obvious that whatever influence may have caused the lady's agitation and the twisting of the rod in her fingers, it could not have been a peculiar and special near-

ness of underground water at that spot. In this instance, too, there can be no suspicion that she was trying to give herself a reputation for an abnormal faculty, while her movements were really the result of knowing that water was almost certain to be found at no great depth in a bed of gravel. We learn also that the most perfect integrity is quite compatible with complete, though unconscious, self-deception. In short, this case is one best explained by the conclusion of Paramelle, that "the wand turns in the hands of certain individuals of peculiar temperament, and that it is very much a matter of chance whether there are or are not wells in the places where it turns." Records of experiments with the divining rod show many apparently similar cases, though the want of sufficient geological details prevents any useful analysis of them.

There is a chapter on the divining rod in Mr. Baring Gould's "Curious Myths of the Middle Ages." We are there informed that in that period, belief in the divining rod became fully developed, and that it was "believed to have efficacy in discovering hidden treasures, veins of precious metal, springs of water, thefts and murders." He adds that, "the first notice of its general use among late writers is in the 'Testamentum Novum,' lib. 1, cap. 25, of Basil Valentine, a Benedictine monk of the fifteenth century." Mr. Baring Gould gives a full account of the services of the well-known Jacques Aymar in the discovery of thefts and murders two centuries ago. Water-finding occupies a very subordinate place in the examples given, but we learn that on one occasion the famous Jacques Aymar, when in quest of a spring of water, found the rod turn sharply in his hand, but that, on digging, not water, but the body of a murdered woman was found. And that Bleton, who fell into convulsions whenever he passed over running water, failed signally when brought to Paris, "to detect the presence of water conveyed underground by pipe and conduits." But the powers both of Aymar and of Bleton failed when they came to Paris. A few instances are mentioned of the search for water in the present century, by means of the divining rod in England and elsewhere. Illustrations are also given showing the various ways of holding the rod, which was usually of hazel.

In the "Gentleman's Magazine Library" (Vol. "Popular Superstitions," p. 148), we find a few contributions about the divining rod, their dates being from the year 1751 to 1819. In the earliest account the writer remarks:—"So early as Agricola (16th century) the divining rod was in much request, and has obtained great credit for its discerning where to dig for metals and springs of water; for some years past its repu-

tation has been on the decline, but lately it has been revived with great success by an ingenious gentleman," etc. Then follow directions for choosing and holding the rods or forked twigs, which may be of hazel, willow, or elm; hazel being preferred. The mode given as that in which the rod should be held is one that must have been very fatiguing and likely to cause changes of position from mere weariness. For each hand grasped one of the two ends of the forked twig, the palms of the hands being upwards and the arms being close to the sides. This position is stated by Mr. Baring Gould to be that usually, though not invariably, adopted. The cases mentioned have no interest to us as evidence.

In the "Proceedings of the Society for Psychical Research," Part V, p. 73 (April, 1884), there is a "Report on Wells sunk at Locking, Somerset, to test the alleged power of the Divining Rod," by Professor W. J. Sollas, and a paper on "The Divining Rod," by Mr. Edward R. Pease, who gives an account of experiments made by himself and other members of the Psychical Research Society, and reviews the evidence collected by Mr. E. Vaughan Jenkins, of Cheltenham, within eighteen months, from persons well acquainted with the facts. Mr. Pease considers that this evidence tends to show "that the power of certain persons to find water when experts fail is widely believed to this day, and is utilised by practical men to whom the finding of water is a business matter." Secondly, "that this power does not depend on superior knowledge of the locality." Thirdly, "that the power does not depend on geological or quasi-geological knowledge or instinct." Fourthly, "that the power is not only shown in finding spots where water is, which might be explained by supposing that there was water everywhere in that region at that depth, but spots where it is not." Mr. Pease admits that "some allowance must be made for the fact that most of our evidence has reached us from correspondents obtained through the diviners themselves.

In the first of Mr. Pease's experiments we learn that the diviner walked about the garden and fields, "and located numerous springs." But when blindfolded and taken over the same ground it was clearly observed that "the rod did *not* move with the dowser blindfold in spots where, just previously, he had located springs." And in attempting to find metal hidden under plates the same diviner succeeded once and failed twice. In the next experiment a lady was the diviner, and was taken over the same ground as in the first case, but with different results, and when blindfolded, she did not confirm her previous indications. The next case mentioned is that on which Professor Sollas reported, and the only one I can find in which the ex-

periment was watched by an experienced geologist. Passing over many points of interest for the sake of brevity, I can only state here that a field was selected on the alluvial flat between Locking and the Bristol Channel. On this the diviner was to indicate two spots, one beneath which water would be found, and another where it would not. Mr. Pease requested the diviner to work blindfolded, but to this he refused to consent. Professor Sollas noticed that he made very good use of his eyes, and walked direct to one side of the field without using his rod, though he then took it in hand over a line of march 20 or 30 paces long. Ultimately he selected a spot about 20 paces to the north of a ditch, as that where water would be found, and another, 15 feet north of this, where it would not. Professor Sollas remarks that sinkings had frequently been made at various spots on this great alluvial flat, and that he consequently knew that sand would be met with in both wells, and water would be found in both. He visited the wells during the sinking and noted the progress made. At the close of the experiment the water stood in both wells at precisely the same height, viz., 5 feet 4 inches below the level of the field. The diviner (or dowser) attributed the water in the well that (according to his view) should have been dry, to an overflow from the other well. But in that case, as Professor Sollas remarks, the strata between the two wells were evidently water-bearing, and furnished water to both. Consequently the well that should not (according to the diviner) have contained water, would have been supplied with it had the other not existed. In fact, he adds, the underground water is not concentrated anywhere, but diffused throughout the alluvium.

In addition to the above cases, which comprise all those in which the powers of diviners were tested by experiments conducted in a scientific spirit, Mr. Pease gives a list of 48, in which diviners were more or less successful in various localities. And fuller particulars of the more remarkable of these cases (which were collected by Mr. Vaughan Jenkins) are given in a second appendix. It is impossible to give a satisfactory analysis of any of these cases, inasmuch as we have not the whole of the data necessary for that purpose. Certain facts of more or less interest are given, but it would be necessary to know many geological and other details in addition before one could come to a decision such as may be obtained from the experiment reported upon by Professor Sollas. I note, however, that in one case (No. 13) the narrator says that he and the diviner went "to a spot from which he (the diviner) could see the contour of the hills (about a mile distant from the house) from which most of our water comes, showed him what spring we knew of,

and told him to choose for himself the best part to try for more." They walked much about the hillsides, finding no water. It was then late, and the diviner was becoming exhausted, as might be expected after his walk over the hills. The narrator adds at this point:—"I felt that I had seen enough to convince me that he was no impostor, and that whatever discoveries he made were due to some force over which he had no control, not to any power he had acquired by experience or observation of making good guesses at where water was likely to be," a remark which, coming at the end of the account of their long geological ramble, seems to show a curious simplicity of mind. It was found that the gardener had nearly the same power with the rod as the diviner. And the narrator adds, that having disregarded geological opinion, and trusted in the diviner, he obtained a water supply at much less depth than geologists predicted. The geological authorities appear to have been a civil engineer, who is no more necessarily a geological authority than a landowner, and another person whose occupation is not specified. However, they had said that there was no chance of obtaining water under the house at a less depth than 120 or 130 feet, while through trusting the diviner, a supply was obtained for the kitchen garden at a depth of nearly 20 feet. An additional supply was obtained from another well, in which, "at the depth of about 28 feet the water rushed in, and rose till it stood about 8 feet deep." The details given in this case are very much fuller than in any other, yet they are wanting in just those particulars which would enable us to form a decided opinion as to the comparative merits of the geologists and the diviner. It is evident that the former ignored the supply from the shallow wells, but whether because they did not consider it wholesome, or did not know of its existence, we know not.[1] We also cannot tell whether or not a better supply could have been obtained at a depth of 120 or 130 feet, as stated by the geologists.

In another case (No. 34) a geologist had advised that a bed of mountain limestone should be sunk through and a bed of clay beneath it reached. This was done, a shaft sunk to a depth of 150 feet, and a boring 10 feet below that made. No water being obtained a diviner advised the driving of a heading from the shaft at a depth of 100 feet, and water was obtained. These two are the only cases in which geological advice was sought.

[1] The danger arising from shallow wells in towns is so thoroughly recognised that most persons used to a water company's supply would probably look at a shallow well at a country house as a source of danger, to be avoided if possible.

In "Borderland" for October, 1896, there is an article on the divining rod. It dwells upon the doings of a diviner who first discovered his powers in 1893. It is recorded of him that "he has been known to exhibit sensitiveness to the presence of water, afterwards proved to be as much as 250 feet below the surface." He has now over forty men in his employment, and is flourishing in his profession as water finder. The writer of the article in "Borderland," "Miss X," who saw the diviner dowsing, says that, going to the nearest hedge, he cut a small forked branch, which chanced to be of birch, though hazel is considered the best wood. She remarked on this substitution, but he replied laughingly that, "in fact he could do just as well without any at all, and that the use of the twig was a mere dramatic detail of the situation so far as he personally was concerned." And we learn that when the original twig broke, the diviner "entirely dispensed with any assistance of the kind, and trusted solely, he told us, to the sensation experienced in the hand and arm." We are also informed that this particular diviner "is conscious of a feeling of 'chill' when passing over water." But when we recall the assertion that "he has been known to exhibit sensitiveness to the presence of water, afterwards proved to be 250 feet below the surface," one cannot but regret that he should be so extremely exposed to chills.[1]

I now proceed to a brief criticism of the evidence afforded by the foregoing cases. Whatever may be my conclusions as to the value of the evidence, as evidence in any given case, I have not the slightest doubt of the good faith of the narrator or of the diviner. I wish simply to point out, as a field geologist, what appears to me to be the value of these cases *as evidence* of abnormal powers on the part of the water diviner, not to deny the possibility of their existence.

To begin with the rod, and its movement in the hands of the diviner, the evidence seems to me to point to the conclusion thus stated by Mr. Pease, in the article already mentioned.

"Diviners always tell us they are certain they are not moving the rod, and even that they attempt to restrain its action. No doubt they are perfectly honest. But anyone who has had the smallest experience in psychical research is aware that such statements have no value whatever. We know by experience what care and study are required to discover whether our own hands are conspiring to deceive our intellects. We are not, therefore, surprised to find that honest dowsers are easily deceived by the unconscious actions of their own muscles."

[1] Some additional cases in which this diviner was employed are given in "Borderland" for January, 1897, pp. 91–2.

Then, it seems evident from the remark of the diviner in the case last mentioned, and from the survey of the ground, without his rod, made by the diviner in the example reported by Professor Sollas, that the rod is now felt to be necessary by the diviner, only as the cowl is necessary to the monk. Doubtless it was once thought essential in a very different fashion. We have seen that it was, and is, not invariably of the same shape, or held in the same way. Yet we also learn that the most usual rod is a forked twig, the ends of the two limbs being held by the operator, and the fragment of the main stem projecting in front. This seems to me curious, as being the exact opposite of the way in which a forked rod would be held for the purpose of warding off the effects of the "evil eye" by persons fearing that influence. Conversely it seems probable, therefore, that this way of handling the rod, when searching for water, was once considered the best, because that most likely to make the holder specially sensitive to the watery or metallic influences which were not feared but desired.

In accounts of the finding of water by a diviner nothing strikes me as more strange than the way in which water found at a certain depth is usually styled "a spring." On looking at the list of cases given as an appendix to Mr. Pease's paper I read, "Strong spring at 30 feet," while of the next case it is remarked, "Spring found at 37 feet." And, looking at the list generally, it becomes evident that "spring" is used simply as the equivalent of "water." But neither in an ordinary English dictionary nor in a manual of geology do we find the term "spring" applied to water, except when it emerges as a natural fountain from the rocks through which it has been flowing underground. To call water found on sinking to a depth of 30 feet a "spring" is therefore not only to use a highly incorrect word, but to foster thoroughly false notions as to the way in which water acts when underground. For it seems to imply that just as obvious springs occur at irregular intervals, without any apparent reason for their existence at the particular spots where they are seen, so underground water becomes concentrated at certain points beneath the surface, and is obtainable only by the man who can hit those particular spots. And these spots are supposed to be extremely numerous in certain very limited areas. Thus Mr. Pease says in the account of one of the experiments (already mentioned) which he and some friends made with a diviner:—"He first walked about the garden and fields and located numerous springs. We then blindfolded him and took him over the same ground, but the springs were so plentiful that it was not easy to ascertain whether he found them again." In the case on which Professor Sollas reports, he

naturally remarks that the underground water was diffused throughout the alluvium. But the diviner evidently thought it concentrated at a certain spot and absent 15 feet away. And the narrators of the various accounts mentioned evidently accept the view of the diviners as to the mode of occurrence of water underground. Consequently a diviner who "locates a spring" at a spot where there is a similar amount of water at nearly the same depth over a radius of hundreds of yards around seems to be supposed to have performed a feat as great as though he had discovered the exact position of a jar full of ancient coins, known to have been buried somewhere in that parish two or three centuries ago.

Indeed, the prevalence of this view as to the occurrence of underground water seems to make a brief and general account of its real "behaviour" desirable.

When rain falls upon rocks almost impermeable, most of it finds its way into the brooks and rivers of the district and but little sinks into the ground. But if it falls upon permeable rocks such as sand, gravel, sandstone or limestone, much sinks in. It percolates easily and evenly through sand and gravel, and passes through sandstones and limestones mainly along the lines of jointing and bedding. Where a permeable rock rests upon an impermeable one and both are lying nearly flat, the rain sinking through the upper rock will be found diffused pretty evenly through its lower beds, at nearly the same level. When both rocks are dipping in the same direction, water falling upon the upper one tends to flow downwards in the direction of the dip and to appear as springs where the rock is saturated to a point above the level of the surface of the ground. In limestones, which are acted upon chemically by rain, very irregular hollows are often formed, so that the descent of water through them is often largely by means of underground channels of considerable size, and the water emerges rather as brooks than as mere springs, as in the district around Settle in Yorkshire. Springs also tend to exist here and there along the course of "faults," or dislocations of the strata, which bring a rock of one kind side by side with a rock of another. It is common when water has not been found in a limestone at a depth at which it might fairly be expected, to make headings from the shaft in order to tap joints and fissures not crossing the shaft. This was done successfully in one of the cases I have mentioned (No. 34) at the suggestion of a diviner, who thereby showed his knowledge of the course usually pursued by geologists under similar circumstances.

The nearest approximation to what might be called an underground spring is the state of things in which an artesian well

can be successfully sunk. In such cases the rocks dip so as to form a broad area shaped like a shallow basin, permeable rocks forming the surface towards the rim of the basin, and being covered towards its centre by impermeable strata. Then the permeable rocks will become saturated with water towards the the centre and dry to a considerable depth towards the rim of the basin. Under these circumstances, if the overlying impermeable beds are pierced through towards the centre of the basin, and the under-lying permeable rocks entered, the water saturating the latter will rise to a considerable height in the sinking or boring, sometimes reaching the surface. But artesian wells have been made common only by the growth of geological knowledge, and are obviously not sinkings in which sensitiveness to the proximity of water can be of any assistance. And I can find few records of the sinking of deep ones at a date earlier than the year 1840, though many have been made more recently. Indeed the demand for water from deep wells, on account of its superior purity and safety, is a requirement at least equally recent.

It may be worth adding that the area within which an artesian well may be successfully sunk is to be measured by acres or square miles not by square feet or yards.

But if we turn our attention (for example) to the sites of the old towns and villages on the banks of the Thames and Lea, we find that they owe their positions mainly to the presence there of a bed of old river gravel, high enough to be above the reach of floods, and affording a water supply attainable by means of pumps. A glance at the maps of the Geological Survey which show the drift, or superficial beds, will at once demonstrate this fact. There we see that though what is now London has spread over various formations, the ancient "City" is on river gravel. Looking up the valley of the Lea we see on the west side of that stream, from Tottenham to Hoddesdon, an almost continuous series of populous villages. Opposite them on the Essex side is but one old town, Waltham Abbey. And the reason for this distribution of population is evidently the fact that on the west side of the Lea there is a broad continuous sheet of river gravel, while on the eastern bank there is bare London clay (from which no water can be obtained) except at Waltham Abbey, where a patch of river gravel appears.

It is evident, therefore, that while geology as a science can hardly be said to be a century old, there must have existed from very early times a knowledge, of a purely practical kind, of the surface beds of a locality and their water bearing properties, or the reverse. When the general geological structure of a district and the relations of its rocks to those of

other districts were utterly unknown, there must have been many men who knew that gravel made a good site for a settlement, and that it was useless to expect to obtain water from a thick clay. And such men, if transported to another district, as different from their own as a chalk country from a coalfield, in geological age and structure, would soon find themselves almost as much at home among the surface beds there as among their own. For the deposits of one river valley have a strong general resemblance to those of another, and superficial gravels or clays, at a higher level, naturally tend to show the same contours, and to produce vegetation resembling that of beds of the same kind fifty or a hundred miles away. A thick clay of one geological age makes a soil like that of another of a very different period, and similar trees are likely to flourish on each. While where water-bearing beds of any age form the surface, and their dip makes them dry at their greatest elevation and full of water at their lowest, the visible changes of various kinds accompanying this lack or abundance of water are as obvious to the water diviner as they can be to the most skilled geologist, who often takes little interest in water questions of this kind.

Indeed, while this ancient practical knowledge of the best spots at which to obtain water at no great depth from the beds forming the surface, and especially from those which overlie unconformably other formations of various ages, has never waned, the rise of geology as a science tended to draw away attention from these superficial beds to those of older date. An example of this tendency is well illustrated in the maps of the Geological Survey of England and Wales. Having been primarily intended to assist mining enterprise by showing the respective ages of the various geological formations, their relations to each other, and their distribution throughout the country, superficial beds were for many years almost entirely ignored. Indeed, in mining districts geological maps which omit superficial "drifts" are generally preferable, as to map them is to obscure more or less the general structure of the district, and the disposition of the older and more important rocks. But it gradually became obvious that in agricultural districts like the eastern counties, which were among the latest to be geologically surveyed, the "drift" formed most of the surface not merely for 4 or 5 feet, but often to a thickness of more than 50 feet. And drift maps of the eastern counties, as of other districts, may now be obtained. But it is easy to understand that the ignoring of the drift in the earlier maps of such a district as Norfolk, Suffolk and Essex must have tended to make residents in those counties think that as regards water supply for private houses, and for

persons who could not go to the expense of a deep well, geology could offer no help. In a paper in the "Essex Naturalist," for January-May, 1894,[1] Mr. George Day mentions three cases in which water diviners have recently been consulted in North Essex, the earliest of the three having been in 1891. And on consulting the Geological Survey maps of Essex, I learn from the *drift editions* that the surface in each case consists of the uppermost member of the Glacial Drift, the impermeable Boulder Clay, which forms the surface rock everywhere in that part of Essex except where the underlying sand and gravel of the Glacial period is exposed in the flanks of the valleys of the rivers and streams intersecting the Boulder Clay plateau. Of course, in such circumstances, water is usually obtained at a moderate depth—averaging from 20 to 40 feet—on sinking through the Boulder Clay to the underlying gravel. And as the towns and villages north of Chelmsford and between Braintree and Bishop Stortford—the district about which the diviners gave advice—generally lie in the valleys, on Glacial Gravel, and these valleys are very numerous thereabouts, it is a district offering as few difficulties to any practical water-finder or well-sinker as can be imagined.

A still more recent case of the search for water in Essex by means of the divining rod is reported in the "East Anglian Daily Times" of December 17th, 1896, and in the "Braintree and Bocking Advertiser" of December 16th. The account in the latter journal, being the more detailed, is given here.

"*Searching for Water with the Divining Rod.*

"*Success of an Expert at Tolleshunt Knights.*

"The Tolleshunt Knights Parish Council, which has been urged by the Maldon Rural District Council for some time past to provide a supply of water for the parish, recently resolved to apply to Mr. H. Bacon, of Newport, Essex, an expert with the divining rod. Mr. Bacon has been very successful in other parts of the county in finding water, and his services in this instance were sought mainly through the recommendation of Mr. F. Blyth, who had heard through his brother-in-law (Mr. Daniells, of Donyland), of the expert's achievements in finding water with the hazel twig. Several members of the Parish Council and residents at Tolleshunt D'Arcy and the neighbourhood met Mr. Bacon on Friday. The party was under the leadership of Mr. F. Blyth. A number of spots in Tolleshunt Knights parish were tried without success; but eventually the first indications of the presence of water were given by the rod in Mr. J. Postford's field. The way in which the twigs turned up astonished the on-lookers, some of them holding Mr. Bacon's hands, fingers, and wrists, so that there could be no deception. Watching his compass, the expert decided that the course to take was towards Stock House Farm. Continuing towards Paternoster Heath, at the top of Park-lane, he was again successful, so

[1] "Notes on Essex Dialect and Folk-lore, with some account of the Divining Rod."

much so indeed that Mr. Blyth suggested this was a likely spot for a water supply. This supply was traced for some considerable distance to the rear of Barn Hall. Mr. Bacon having exhausted his stock of twigs, a move was made to Manifold Wycke Wood, where a fresh supply was obtained. Arriving on the top of Barn Hall-hill right in the centre of the road, the twig again denoted the presence of water, this stream being traced through Manifold Wick on to the side of the hill immediately opposite, and within 150 yards of the front door of Tolleshunt Knights Rectory. From near this spot it is suggested that water could easily be carried to Salcot, where the only supply is from rainfall. Mr. Bacon, the expert, is a carpenter by trade.'

In the district south-west of Colchester, around Tolleshunt D'Arcy and Tolleshunt Knights, a water supply may be obtained, either by sinking through the London clay (which forms most of the surface) to the lower Tertiary beds or the Chalk, or by means of a shallow well in the superficial gravel. A supply from the Chalk may be had only at a depth of from 300 to 400 feet. On the other hand the superficial gravel exists only in patches of variable size and thickness which here and there cap the higher ground. A glance at the Geological Survey map (48 S.W.) shows that Tolleshunt D'Arcy and Tolleshunt Major both stand upon gravel outliers of considerable size, but no deposit appears above the London clay at Tolleshunt Knights, which stands on high ground on which a capping of gravel or loam, or some mixture of the two, might be expected. Mr. W. H. Dalton, in the brief memoir describing the geology of 48 S.W. mentions Great Wigborough as an exception to the rule that gravel is to be found on the hill tops, but says nothing about Tolleshunt Knights. And though, as I have already remarked, no gravel is mapped there, I notice on the old ordnance map used by the geological surveyors the words "Wigborough Springs," between Barn Hall and Manifold Wick, about the middle of the course taken by the water seekers between Barn Hall and Tolleshunt Knights Rectory. It appears, therefore, that the diviner of to-day only recognised what had been noticed by earlier inhabitants of the district many years, perhaps centuries, ago. And it suggests the existence of a water-bearing deposit at Tolleshunt Knights, above the London clay, which has not been mapped as gravel because it consists of a variable mixture of loam and gravel or sand.

On January 4th, 1897, I visited Tolleshunt Knights, going from London to Kelvedon, the nearest railway station, and walking thence over Tiptree Heath. At Tiptree Heath the flattened contour of the ground, which is seen where the London clay is covered by boulder clay, gravel, sand or loam, is very obvious; large pits close to the road showing that the deposit in this case is gravel. A valley of no great depth

intervenes between the high ground of Tiptree Heath and that of Tolleshunt Knights. On approaching the last-named place it is seen to be a very thinly populated parish in which there are only a few scattered houses. It also becomes evident that the high ground enclosed between the roads diverging, on the one hand to Virley and Salcot, and on the other to the rectory and church of Tolleshunt Knights, has a flattened contour indicating the presence there of some surface deposit above the London clay. At Tiptree Heath, as we have seen, this surface deposit is evidently gravel, but I could see no sections in that of Tolleshunt Knights. The route taken by the diviner along the edge of the high ground between Barn Hall and the rectory is precisely that which would be taken by any field geologist wishing to know if much water came out of the surface deposit at its junction with the London clay ; a previous inspection of the contours of the ground capping the plateau having shown the existence there of beds of some kind overlying the London clay.

In short, the details of those cases in which sufficient geological information is given to allow of their discusssion reveal nothing in the diviner but the practical information and shrewdness in water-finding which were probably more common than they are in the days when shallow wells were freely used not only for the supply of isolated houses in the country, but throughout our largest towns. I have been unable to detect any unquestionable signs of abnormal sensitiveness to the proximity of underground water in any of the cases considered, and have noted much tending to show that a supposed feeling of that kind was really unconscious self-deception. For Lady Milbanke was evidently deceived by her sensations, and we learned from Professor Sollas' report that the diviner felt the nearness of water at one spot on an alluvial flat, and its absence a few feet away, the result showing that it was equally near in both places. And in the only other scientific experiments, those of Mr. Pease and his friends, the diviner, when blindfolded, did not feel the proximity of water at the same spots at which previously his rod had moved. Again, as we have seen, it is recorded of one diviner, that "he has been known to exhibit sensitiveness to the presence of water afterwards proved to be as much as 250 feet below the surface" ("Borderland," October, 1896, p. 429). And as the same diviner is "conscious of a feeling of *chill* when passing over water" (p. 432), his sensations must in most parts of the country receive so many violent shocks as to be utterly untrustworthy.

Yet we find Mr. Pease and his friends, in spite of the

result of their own experiments, thinking that the evidence mentioned, but not capable of being tested, showing the finding of water by diviners, demonstrates that their power "does not depend on geological or quasi-geological knowledge or instinct." But as this conclusion evidently results from the experimenters sharing the peculiar views of the diviners as to the distribution of underground water, I need only add that the necessity of discussing the subject from a geologist's point of view is thereby demonstrated. It is evident also that the nature of the distribution of underground water makes the *demonstration* of any abnormal sensitiveness to its proximity on the part of a diviner almost an impossibility. And, as a field geologist, it seems to me almost impossible to select any locality in which the question could be tested. If the discovery of water at a certain depth were equivalent as evidence to the discovery of a jar full of ancient coins, in implying the hitting or missing of a definite spot of small size, of which there was no surface indication, then there would be no need for these remarks. Special powers on the part of the diviner might then be freely conceded.

At the same time, though the available evidence seems to me to suggest no qualities on the part of the diviner beyond practical shrewdness and a good eye for indications of the presence or nearness of water in surface rocks, and of their water-bearing properties or the reverse, I am far from wishing to depreciate the value of the services he often renders. His practical merits in pointing out where water may be found at a moderate depth for the supply of isolated houses are in no way counterbalanced by unsound theories as to the way in which underground water is distributed, or by the fact that his mysterious rod can be looked upon only as a badge, equivalent to the wig or white cravat of more learned professions.

Appendix I.

The subject of the divining rod being evidently one likely to be discussed in "Notes and Queries," I looked through the volumes of that journal from its beginning in November, 1849, to the end of 1896, and found it mentioned at various dates, as shown below. At the end of every six years or twelve volumes, a new "series" of "Notes and Queries" begins:—

1st Series, vol. viii, 293, 350, 479, 623. (1853.)
" " " ix, 386.
" " " x, 18, 155, 449, 467.
" " " xi, 19, 93.
" " " xii, 226.

2nd Series, vol.	i, 243.	(January—June, 1856.)
3rd	„		Nothing	
4th	„	„	xii, 412.	(June—December, 1873.)
5th	„	„	i, 16.	
„	„	„	ii, 511.	
„	„	„	v, 397.	
„	„	„	vi, 19, 33, 106, 150, 210, 237.	
„	„	„	x, 295, 316, 355.	
„	„	„	xi, 157.	
6th	„	„	iii, 236.	
„	„	„	vi, 325.	
7th	„	„	viii, 186, 256.	
„	„	„	ix, 214, 243, 338.	
8th	„	„	iii, 107.	
„	„	„	ix, 266, 335, 415.	(January—June, 1896.)

The first mention of the divining rod in "Notes and Queries" is in the number for September 24th, 1853 (vol. viii, 293). On p. 350 of the same volume, and on pp. 623, 624, the Hutton-Milbanke experiment is alluded to, also in vol. x, pp. 18, 155, 450. The writer in vol. viii, pp. 623–24, says that Dr. Hutton disbelieved in the divining rod till "a lady of quality, who herself possessed the faculty, called upon him and gave him experimental proof, in the neighbourhood of Woolwich, that water was discoverable by that means. This Dr. Hutton afterwards publicly acknowledged." It is somewhat singular to find the interest in the divining rod shown in 1853–55, succeeded by a period of about seventeen years, 1856–1873, during which nothing on this subject appears. Since 1873 it has attracted attention from time to time as new experiments have tended to revive discussion upon it.

The "Times" of October 6th, 1882, contained an article on the divining rod, and letters thereon appeared in that journal on October 8th, 16th and 24th, 1882. The subject was discussed in the "Standard," December 25th, 28th, 29th and 31st, 1888, and January 1st, 2nd, 3rd, 4th, and 12th, 1889. Also February 24th, 1890.

The "Pall Mall Gazette" of January 25th, 1897, contains an article on the divining rod, in which the writer, after mentioning various cases, including the very recent experiment at Tolleshunt Knights, concludes with the following remarks on diviners of the present day:—

"Among those who now make use of the divining rod, hardly any two persons seem to employ the same signs for indicating the presence of water. In the hands of one 'dowser' the twig will bend upwards, in those of another downwards; while in the case of a third it will spring about in a most amazing fashion. The hazel branch is usually cut in such a way as to leave a 'fork' at one end; but while some men will hold the prongs of the fork against the balls of their thumbs and third fingers, others will slip one prong under the little finger and let the rest

or the stick balance on the back of the hand. Any movement of the stick, apart from that necessitated by its being carried from place to place, is supposed to be due to the presence of water and without volition on the part of the diviner. In some instances the 'dowser' has professed to be unable to carry out his experiments satisfactorily unless absolute silence was preserved by those about him, while one old diviner invariably refused to pursue his investigations where it was possible for any one to observe him. In this latter case the art of divination must have been considerably simplified. Divining experts have also differed as to the hour best suited for their tests, some preferring early morn, others midday, and yet others the dead of night.

"In 1893 there died, in a remote North Norfolk hamlet, an old woodman who was looked upon as an exceptionally skilled manipulator of the divining rod. During his latter years he lived in a small lath-and-plaster walled cottage on the outskirts of a scanty coppice, from which he was accustomed to cut his hazel twigs. Until he became too old and feeble to move far from his home, he would frequently make long journeys into distant counties for the purpose of seeking hidden springs of water. It always pleased him to pose as a somewhat mysterious character, and when he thought he was observed he would come to a standstill on the public road and go through all kinds of queer antics to the amazement—and often to the amusement—of his beholders. He lived quite alone, and it was only when seized with his final illness that he would permit any one to pass the threshold of his cottage, though there was no obvious reason why he should have been so particular in this respect. Questioned once as to his supposed skill with the rod, he professed himself quite unable to understand it; but he maintained that there was no deception in any of the experiments he had conducted, and that, with one exception, they had proved successful. The finding of water, he said, 'came natural' to him, and, providing he had his hazel stick with him, he could tell whenever he was in the neighbourhood of a spring as he walked along the road."

In the "Pall Mall Gazette" of February 13th appeared the following article:—

"*The Divining Rod.* By Lady Dorothy Nevill.

"Some few days ago I saw in the 'Pall Mall Gazette' an article somewhat doubting the efficacy of the divining rod for finding water. I think I am in a position to prove its efficaciousness. In one of the many lovely portions of Sussex, between Tunbridge Wells and Eastbourne, there is a most beautiful old house, at Mayfield, once the palace of Sir Thomas Gresham, where he was knighted by the Virgin Queen, and where St. Dunstan, as Archbishop of Canterbury, often came, and where are still preserved the veritable tongs with which the said St. Dunstan assaulted the devil's nose when he came to offer him many evil things. It is now the Convent of the Holy Child, and as such commands respect and reverence everywhere. As in most parts of Sussex, water is wanting, and the lady superior bethought herself of calling in the aid of an expert to try and solve the difficulty. They sent for a gentleman from the North, who had discovered that he possessed the faculty of divining where water was to be found. He was invited to explore the grounds of the old palace, and he went with one of the nuns over the neighbouring meadows and pointed out several places where water would be found and the direction where the underground springs flowed. He used no divining rod, but simply walked over the ground, and when asked what he experi-

exposed to cause him to say that there was water below, he said he could not explain exactly what he felt, but that it was something like a cramp in his back, that the sensation was a painful one, and that it made him ill if he continued the process for any length of time. He also said he could not tell whether the water was near the surface or below; he had not had sufficient experience to detect the difference. The authorities of Mayfield were not sufficiently convinced to begin operations, but were so far impressed as to determine to call in the aid of another expert. He came, and strangely enough to those who doubt the faculty, he selected the same spots and pointed out the direction of the flowing water the same as the gentleman had previously done. The expert went into a species of convulsion, shook and trembled at the spots he considered to be over the water, and he was of opinion that the stronger the convulsion the greater the quantity of water below. He used the spring of a watch as his divining rod. I don't know if he considered this a necessity. Having decided to bore for water at a point indicated, and where the expert considered the water to be near the surface, they found it at a depth of 30 feet, but for several reasons the spot was afterwards abandoned for one nearer the house, which both amateur and expert considered a favourable position. Here again water was found some 30 feet below the surface, but as the borers thought the supply insufficient, they again bored to a depth of 270 feet, the result being an inexhaustible supply. The whole of last summer was very dry in the neighbourhood, and yet the water showed no sign of falling off (though nearly all the wells had given out), but gave a constant supply, as if unaffected by the state of affairs at the surface. I must remark that, when I went last year to see my friends of the convent at Mayfield, I found them in great consternation, as all this water was found to be chalybeate, with much iron, which rendered it useless for washing purposes."

Mayfield geologically is in the middle of the district occupied by the "Hastings Beds," which form the undulating ground between Tonbridge and Hastings, and have a total thickness of about 1,000 feet. They have been grouped into four or five sub-divisions having names such as "Tunbridge Wells Sand," "Wadhurst Clay," etc., which imply that considerable thicknesses of strata, mainly sand and sandstone, alternate with others mainly clayey. The village of Mayfield stands on Tunbridge Wells Sand, and the account in the "Pall Mall Gazette" suggests to me that the borers got water at two different spots at 30 feet owing to the presence locally of a clayey seam just below that depth, which prevented the water falling through the sandstone from sinking lower. Naturally a more copious supply, unaffected by droughts, was obtainable from the lower beds of the sandy formation at a depth of 270 feet. But Mayfield probably owes its existence as a village to the presence of the Tunbridge Wells Sand there and the possibility of getting a water supply from the shallow wells. Topley, in his "Geological Survey Memoir,"[1] p. 396, remarks:—"On the Hastings Beds in Kent and Sussex there are ninety-

[1] "Geology of the Weald."

seven towns and villages, seventy-nine of which have sandy sites." Of course, in some cases, the proximity of a stream has furnished a clayey site with a water supply. And here, as elsewhere, isolated farm houses existed, and now exist, dependent simply on ponds and rain-water butts. But in the district occupied by the Hastings Beds neither sandy nor clayey formations predominate to any perceptible degree as regards the amount of surface occupied by each of them, while it would be difficult to select a site of either kind lying more than two miles away from an area covered by the other kind of rock. This makes the selection of water-bearing sandy sites the more significant.

In the "Pall Mall Gazette" of February 17th (1897), appeared a brief rejoinder to Lady Dorothy Nevill from the writer of the article on the divining rod of January 25th. And in the same journal, on February 20th, the following case is given:—

"*The Divining Rod.*

"To the Editor of the 'Pall Mall Gazette.'

"Sir,—I venture to trouble you with a short account of my own experience of water-finders and their methods. We are situated in Needwood Forest, on the top of a mass of marl thrust up between the rivers Dove and Trent. Our water is derived from wells averaging from 140 feet to 180 feet deep, and owing to a series of dry years our supply has recently been very scanty.

"Our best well gives about 4,000 gallons in the twenty-four hours. About three months ago I sent for Mr. Mullins, the well-known water-finder, who walked round the property with a small hazel wand or twig in his hands. Every now and then the wand seemed to twitch, and he indicated that water would be found in these places, naming an approximate depth and probable supply. At last we came to a field where the twig gave indications of a row of springs, and Mullins informed us that if we sank we should probably get a supply of nearly 40,000 gallons in the twenty-four hours. We have sunk, and at 140 feet to 150 feet we have a most abundant supply, quite equal to what was promised, and we expect to get more by driving adits right and left.

"One curious thing was that when the twig was placed in another person's hands turning towards the ground, on Mullins grasping the hands the twig slowly turned up; but this happened only with two out of four persons experimented on. I cannot explain the phenomenon, but it appears to me to be perfectly genuine, and certainly in my case the result has been very successful.—I am, faithfully yours,

"BURTON.

"*February* 18."

In this case we learn that the existing supply was derived from wells averaging from 140 feet to 180 feet in depth, and that on sinking at another spot on the same property water was found at a depth of 140 feet to 150 feet. The natural inferences seem to be that the diviner, knowing the existing wells and their

depth, saw that water would, in all probability, be obtainable at a similar distance from the surface a few hundred yards away. And had local scarcity of joints and fissures resulted in a scanty supply, more would have been obtained by the well-known expedient of "driving adits right and left," and a good supply secured at that depth, after all.

In the "Athenæum" of February 13th, 1897, there is a review of "The Sacred Tree" by Mrs. J. H. Philpot (Macmillan & Co.). Mrs. Philpot is quoted by the reviewer as stating that she thinks the divining rod "a superstition cognate to the belief in sacred trees," and as remarking that, "it is not necessary to discuss the credibility of their [the diviner's] assertions, or to formulate a theory to account for their success." The reviewer differs from Mrs. Philpot on both points, holding both that the divining rod has no connection with tree-worship, and that the apparent success of the diviner in so many cases makes the ascertainment of its causes desirable. He seems, however, to think Lady N. (of the "Quarterly Review" case) and Lady Milbanke were two distinct persons, remarking:—"A Lady Noel is quoted as a successful amateur dowser. . . . Lady Milbanke, Byron's wife's mother, also 'dowsed.' Dr. Hutton tested Lady Noel with success."

There is an article on "The Divining Rod" in "Pearson's Magazine" for March, 1897, pp. 302–312. The writer inclines to the belief that "the diviner transmits movement to the rod, such movement being the outcome of involuntary nerve-muscular contractions which are caused in some persons by the near presence of running water." Portraits of diviners and views showing the scenes of their experiments are given, but the small scale of the latter makes comment on them somewhat difficult. However, in the case at Pembrey, on the South Wales Coalfield, "the face of the hill" looks to me like the dip-slope of a sandstone. The rain falling on this rock would flow downward in the direction of the dip, and (as coal-measure sandstones are seldom of any great thickness) a supply of water at no great depth might naturally be expected in it anywhere at a certain distance from the top of the slope. And the well appears to be a considerable distance from the top. In the case at The Hendre, Monmouth, the diviner appears to be searching for water on an alluvial flat. But in this instance—if my supposition is correct as to the site—water would naturally be found at the same level everywhere (as in the experiment noted by Professor Sollas) and one spot was as good as another for the water-seekers.

An anecdote is given of an experiment at Osterley Park, where a party of scientific men were invited to witness the

proceedings of a well-known diviner. The latter "indicated a place or places where water would," he said, "be found, and as he walked across the land stakes were stuck in the earth to mark the track of the hidden water." Then one of the scientific visitors said to the diviner:—"We will blindfold you, and you shall start again, and we will see if you again take the direction indicated by the stakes in the ground." The diviner, however, decidedly refused, saying:—"I didn't come here to be blindfolded, I came here to find water for Lord Jersey," and adding, "I do this to earn my living, and if I chanced to fail the second time and not keep to the line of stakes, what would become of my reputation, now valuable, with all you scientific gentlemen as witnesses to my failure?"

In the cases in which Mr. Pease and his friends experimented with diviners, different results were given when the diviners were blindfolded and when they were not. In that just mentioned, the diviner refused lest he should fail. But on the hypothesis that he is guided by peculiar physical sensations resulting from the nearness of underground water, and not by observation of external objects, blindfolding ought to be advantageous. For he would then become more nearly the passive instrument and indicator of his inner feelings.

The novel by Lucas Cleeve styled "The Water-finder," published in February, 1897, has a diviner for its hero. In Chapter XIII, there is some account of the mysterious "faculty for water-finding," and, among other details, the statement that "there were proofs of the gift in Judith Noel, afterwards Lady Milbanke."

I will only add, in conclusion, that the following advertisement appeared in the "Times," of March 22nd, 1897:—

"Water Discovered by the Divining Rod.—Results guaranteed; 30 years' experience.—Merryweather, 63, Long-acre, London, W.C."

"*Times*," *March* 22, 1897.

APPENDIX II.

Divining at Ampthill, Bedfordshire.

In the "Times" and "Daily News" of June 1st, 1897, and in other newspapers of the same date, appeared paragraphs stating that the fees of a water-diviner who had been called in by the Ampthill Urban District Council had been disallowed by the Local Government Auditor for the county. Below is the "Times" report:—

"*A Water Diviner's Fees.*

"At the annual audit of the accounts of the Urban District Council of Ampthill, Bedfordshire, which was completed on Friday last by Mr.

W. A. Casson, the Local Government auditor for the county, several ratepayers raised objections to an expenditure incurred in the employment of Mr. Leicester Gataker, a water diviner. They produced geological plans and sections to show that, if the diviner's recommendations were acted on, the council would be boring into a stratum of Oxford clay, the depth of which had not been fathomed as yet, although a boring had been made to 700 feet, and no water obtained. The district council had applied to the Local Government Board for a loan to carry out boring experiments to test Gataker's recommendations. The Board ordered a water supply to be procured within a limited time, leaving the council a free hand how they went to work, and they unanimously resolved to employ Gataker. In reply to the auditor, the chairman said that Gataker did undoubtedly hold out that he had a mysterious power of discovering water. His method was to start with his arms spread out and walk slowly over the ground. Suddenly he would stop as though he felt a shock, and it was there that he 'located' a spring. He would then step backwards and forwards to ascertain the depth of the spring and the volume of water. In his report he named a number of springs in one field, and the total of the water there was more than ample for the town. The auditor, in announcing his decision, stated that in seeking for water the district council had disregarded the reports of experts and had gone for guidance to a man who had a reputation for discovering water by some unusual and peculiar method not possible to ordinary persons, and the question he had to settle was whether this was legal or not. He noted that Gataker took the trouble to do what ordinary professional men would not think of doing—namely, to state, 'I guarantee my business to be genuine,' whilst no guarantee whatever in the legal sense was given that water would be found where it was located. Money might properly be spent on experimental borings under proper advice, but it had not been proved that this man had any greater power than any one else. The district council were in the position of trustees of public moneys, and must not spend them in a speculative manner. In the only case that had come before the Courts which bore upon this matter the judges had held that 'the pretence of power, whether moral, physical, or supernatural, with intent to obtain money was sufficient to constitute an offence within the meaning of the law,' and he (the auditor) thought that, as Gataker claimed to exercise some such power, his employment was clearly illegal, and the amount of his fee would, therefore, be disallowed, and the gentlemen who authorized the payment surcharged with it. They could appeal either to the Queen's Bench Division or to the Local Government Board against the surcharge."

Mr. A. C. G. Cameron, of the Geological Survey, having been good enough to send me much information about this case, in answer to my request for it, I learn from Bedfordshire newspaper cuttings that some time ago the water of the Ampthill wells was found unfit for drinking, the medical officer stating that the supply from all the wells in the town was bad. It was accordingly decided that a better supply should be obtained. But in January, 1897, the Local Government Board forwarded to the Ampthill Urban District Council a copy of a complaint made by Dr. H. F. Holland and five other residents at Ampthill, on account of the Ampthill Council's delay in providing it. The complainants stated that the late Local Board, in December, 1894,

"Accepted Mr. Beesley's offer to obtain a report respecting a water supply for Ampthill from Mr. A. C. G. Cameron, of Bedford, Her Majesty's Geological Surveyor, and in January, 1895, Mr. Beesley submitted a report thereon, with one from Mr. Cameron, to the Urban District Council. Therefore we now consider the council is not acting in the best interests of the inhabitants in disregarding the order of Her Majesty's Geological Surveyor for that of a water diviner, etc."

In answer to this communication a reply was drawn up by the clerk to the Ampthill Council, in which it is stated:—

"With regard to the water supply, as stated by Dr. Holland and his friends, Mr. Cameron, the Geological Surveyor of Bedford, made his report upon the probabilities of finding water in the district, but owing to a doubt of the sufficiency of the supply at two localities which he pointed out without robbing the surrounding occupiers, his plans were not adopted, and in the mean time, as you were informed, the water expert, Mr. Gataker, was engaged to try for water.

"The clerk adds that Dr. Holland had always endeavoured to force upon this council the adoption of Mr. Beesley's expensive scheme (which would most probably be opposed in Parliament) of obtaining water from Barton, eight or nine miles distant."

Mr. Cameron says that Barton is but from seven to eight miles away. However it is evident that the diviner was called in on account of the expense of the geologist's plan.

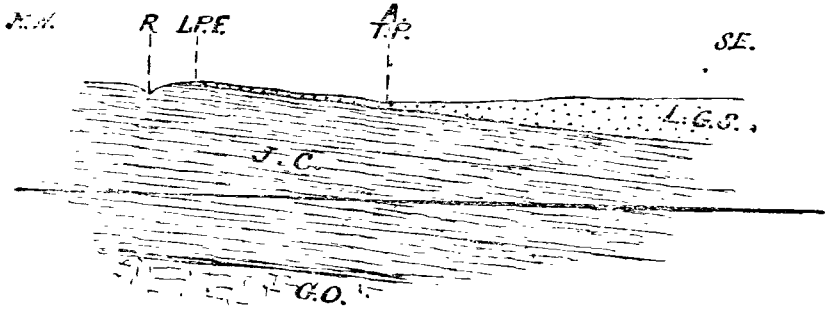
Mr. Gataker, the diviner, on his first inspection of the district, stated that sinkings of from 25 to 100 feet in Little Park field would yield more than the quantity of water required for the town. But the quantity obtained being insignificant, he, some months later, advised deeper sinkings at the same spot, called elsewhere Mr. Fountain's field, on the Little Park Estate. In the "Bedfordshire Mercury," April 24th, 1897, Mr. Gataker remarks:—

"On April 2, I paid a second visit to Ampthill, as requested by the District Council, for the purpose of re-locating the sites indicated by me on the 13th of August last in the Little Park field, at which a supply of water can be obtained to supply the district. As the spots were located irregularly last time, I took the opportunity this visit to locate them in one line as near as possible."

Mr. Gataker then gives details as to the supply available, estimating that a minimum supply of 35,000 to 40,000 gallons a day can be found in that field, obtainable from ten springs varying in depth from 150 to 300 feet. To this report was appended a note in which it is stated that, in addition to the quantity of water obtainable at greater depths, Mr. Gataker predicts "that about 15,000 gallons will be found in the top sand." He therefore thinks that there is sufficient water in Ampthill parish without the expense of going to another.

Ampthill is situated on sand belonging to the formation known as the Lower Greensand, near its junction with the underlying Jurassic Clay. This clay is many hundreds of feet thick, and consists of the Oxford and Kimeridge Clays, which form one mass, owing to the local absence of the Calcareous Grit usually found separating them. Borings to a depth of 700 feet are said to have been made in this clay in former years, the bottom of the clay not having been reached and no water obtained.

Mr. Cameron tells me that the maximum thickness of the sand at Little Park field is only from 10 to 20 feet, and that there are spots there at which the underlying Jurassic clay appears. He thinks that the 700 feet given as the thickness of that clay may perhaps be too great. But if we suppose it to be only 500 or 600 feet it is evident that sinkings into the clay to a depth of from 150 feet to 300 feet (as proposed by Mr.



G.O. = Great Oolite. *J.C.* = Jurassic Clays. *L.G.S.* = Lower Greensand.
R. = Railway. *L.P.F.* = Little Park Field. *A.T.P.* = Ampthill Town Pump.

Gataker) must be useless, as all the water found in them would be derived from the sand above. This is, in short, a case in which knowledge of geological structure, and not a keen eye for surface water-bearing beds, is required. Mr. Cameron kindly sent me a section explaining his view, from which I take as much as will illustrate the geology of Ampthill.

Before leaving this case it seems worth while to call attention to a letter addressed to the Editor of the "Beds Times," by "Henry Chesterman, Champion Expert Water-finder." It appears in the "Beds Times" of June 19th, 1897. In it he says, *inter alia*:—

"I strongley recommend your Council to engage a water-finder with more experance and to verify the spotes marked by your water-finder who as not been without bad shotes, on less the water-finder will guarantee the amount of water and the depth within 20 feet and if he fail on this to have no money for the boring or sinking done, this is how I do the Parish

Council work which prevents bad feeling if there is not any water. I don't know if your water-finder pretended to find the water with his *hands* spread out without a rod or not, if so I am not supprised at the ratepayers feeling their selves disturbed as there is no such thing as finding water that way with hand and fingers stretched out on less to ketch the rain falling and such practice is a disgrace to the rod."

Thus this Ampthill case is of interest in showing the very varying amount of importance attached to ritual by individual diviners.

APPENDIX III.

Conclusion.

Mr. A. C. G. Cameron having informed me that he believed Mr. R. H. Tiddeman, of the Geological Survey, knew of some divining cases, I wrote to Mr. Tiddeman, who is at present stationed in Glamorganshire, and who kindly gave me the following particulars of a few that he had known something about near Bridgend in that county.

(1) At Porthcawl a diviner named Thompkins was called in by the local council. Mr. Tiddeman tells me that the diviner took them to a little flat in Triassic conglomerate lying just below a small escarpment, caused by the presence there of some more conglomerate lying above red marl. This little flat is not quite 50 feet above the level of the sea. According to the diviner's instructions, a shaft was sunk there in this conglomerate to a depth of 140 feet. At a depth of 32 feet a supply of water was obtained amounting to 700 gallons per hour, but that being insufficient they deepened the shaft to 140 feet without meeting with any additional water except close to the bottom, where a little trickled in.

(2) A diviner was employed near Pyle by a publican named Loveluck. He promised water at a depth of 12 feet at a spot below a little escarpment in Triassic marls, but no water was found.

(3) A lady amateur-diviner recommended Lord Dunraven to sink on the top of the hill near Dunraven Castle, without result. Mr. Tiddeman says that the rock in this case was Lias limestone.

In addition, Mr. Tiddeman gives me the following details of a Yorkshire case.

(4) Above Whitewell, in the valley of the Hodder near Clitheroe, where the rocks are Carboniferous limestone and shale, covered here and there by Boulder Clay, a diviner named Mullins was called in to get water for a farm. He carried his rod across the buried pipe which conveys the

main water supply for Preston, without noticing it, and recommended sinking in a corner where rushes were growing. His advice, however, was not acted upon. Mr. Tiddeman adds that having written to the "Preston Herald" about this case, Mullins rejoined that "he had never been near Preston water-works, to his knowledge," which was evidently true.

Professor W. F. Barrett has written a most important paper on Water-Divining, which will appear in the XXXIInd part of the "Proceedings of the Society for Psychical Research." As he has been good enough to send me his proof sheets and invite comment upon them, I have made remarks on various cases in which I could obtain sufficient knowledge of the local geology to enable me to do so usefully. These remarks will appear with his paper. I will only add that while every anthropologist must be glad that the subject has been taken up by a physicist so eminent as Professor Barrett, it appears to me that it should also be surveyed from the point of view of the field-geologist. For he only is likely to form a just estimate of the great amount of practical knowledge obtainable by the eye trained to notice the surface features of the ground, even in a district not previously known to the observer.

As to the nature of the personal peculiarities of those in whose hands the rod turns violently, I will only add that they probably resemble in nervous organisation those who become intensely excited at fervid religious meetings. The amateur-diviner appears to be influenced solely by his inner sensations; the professional by his inner sensations together with his practical knowledge of water-bearing surface beds. Both unite in the erroneous belief that underground water exists (in water-bearing beds) concentrated at certain spots and absent a few feet away. Consequently the facts as to the distribution of underground water seem to be fatal to the notions that the diviner's sensations, whatever their origin, are caused by the peculiar nearness of water at the points where they are specially felt, or that he possesses any peculiar or abnormal faculty for its discovery.

Notes *on a* Box *used in* Smuggling *on the* Scottish Border *between* Fifty *and* Sixty Years *ago*. By T. V. Holmes.

This box is one which was actually used, about the year 1842, for smuggling whiskey from Scotland into Cumberland. It is nearly cubical in form, being about $9\frac{1}{4}$ inches long by $7\frac{1}{4}$ inches broad and $7\frac{1}{4}$ inches deep, measured externally. The lid is fastened down by four screws, one at each corner, and it would therefore take some little time to open. Inside is a small keg, capable of holding half a gallon of whiskey: the space inside the box not occupied by the keg was filled (when in use) with small pebbles. When seized and shaken by the exciseman only the rattling of pebbles would be heard, and the owner of the box would almost certainly be considered a mere harmless collector of stones: and the time involved in opening the box would in itself tend to be a strong check on further investigation.

The box was given to me in 1889 by an old friend, an aged and respected citizen of Carlisle, who had used it himself, as an amateur, in his youth. This smuggling of whiskey from the Scottish to the English side of the Border was caused by the exaction of a much greater amount of excise duty on the English than on the Scottish side, English borderers naturally resenting this absurd anomaly. Salt was similarly treated till the year 1822, when a man named Harding, of Great Corby, Cumberland, was shot by an exciseman named Forster while endeavouring to smuggle three stones of salt in order to cure his pig, an incident which may have had some influence in causing a great reduction of the salt duty in 1823. In spite, however, of a desperate affray which, my friend informed me, took place on Eden Bridge (Carlisle) between smugglers and excisemen in 1824, the equalisation, on both sides of the Border, of the excise duty on whiskey did not occur until 1855.

As the former existence of Border smuggling is now singularly little known, I will here give two incidents connected with it which were told me by my friend Mr. R. O. Heslop, of Newcastle-on-Tyne,[1] as related to him by relatives of his own. Carlisle is only between eight and nine miles from the nearest point on the Scottish Border, and the river Eden, or the Solway, into which it flows, must be crossed by any person entering the city from the north. A beggar-woman, singing a melancholy song, and carrying a heavy baby under her shawl, slowly worked

[1] Author of "Northumberland Words," Eng. Dialect Soc., 1894.

her way across Eden Bridge. The baby was constructed of tin, and held as much whiskey as the strength of the bearer permitted. But one of the latest feats known to Mr. Heslop occurred on the eastern border after the Newcastle and Berwick railway had been opened through to Edinburgh (1847–50). The favourite annual factory trip was then from Newcastle to Edinburgh. A special train was run, and the trippers were accompanied by the factory bands, and took with them many banners, which were carried on painted poles with the usual wooden button on the top: but the poles were iron tubes made to look like wood. The button on the top unscrewed, and the poles were filled with whiskey in Edinburgh and borne in triumph through the streets to the railway station. There the flags were wrapped up, and the poles laid upon the top of the carriages outside. The revenue officers boarded the train at Berwick and searched everything but the poles on the roof.

But in the case of Border smuggling the most remarkable thing is not the ingenuity of the smugglers, but the almost incredible conduct of the successive Administrations, which, differing more or less in other matters, agreed in perpetuating this monstrous system for the promotion of smuggling within the limits of the same kingdom. Sir Walter Scott remarks in "Redgauntlet" (Chap. XIII) that Alan Fairford had long known that "the excise laws had occasioned an active contraband trade between Scotland and England, which then [about 1764] as now, [1824] existed, and will continue to exist, until the utter abolition of the wretched system which establishes an inequality of duties between the different parts of the same kingdom; a system, be it said in passing, mightily resembling the conduct of the pugilist, who should tie up one arm that he might fight the better with the other." But though "Redgauntlet" must have been more generally read, in 1824, than any other novel of that year, more than a quarter of a century was to elapse before this gross and gratuitous evil was abolished. Lockhart remarks that more of Scott's personal experiences are given in "Redgauntlet" than in any other of the Waverley Novels. But for this fortunate circumstance we should now be without any picture of Border smuggling, though tales of organised smuggling with foreign countries on our southern shores are by no means rare.

On consulting Hansard, I find that in July, 1851, the then Chancellor of the Exchequer stated that English spirits paid 7*s.* 10*d.* a gallon duty, Scottish spirits 3*s.* 8*d.*, and Irish spirits only 2*s.* 8*d.* In 1853 Mr. Gladstone, then Chancellor of the Exchequer, made a step towards equalisation by

raising the duty on Scottish spirits to 4*s.* 8*d.*, and that on Irish spirits to 3*s.* 4*d.* In 1854 the duty on Scottish spirits became 5*s.* 8*d.*, and on Irish 4*s.* And in 1855, during the Crimean War, the duty on English and Scottish spirits was equalised, both paying 7*s.* 10*d.* a gallon, while that on Irish spirits was raised to 6*s.*

JUNE 8TH, 1897.

E. W. BRABROOK, Esq., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

Mr. H. W. SETON-KARR read a paper on "Newly Discovered Stone Implements from Somaliland, and from the Lost Flint Mines of Egypt."

Dr. GARSON gave an abstract of a paper by Dr. PAUL TOPINARD, on "Anthropology in Brittany," and Dr. JOHN BEDDOE read a paper by himself and Mr. A. W. MOORE on "Physical Anthropology of the Isle of Man."

Votes of thanks were passed for the papers.

TABLE OF MEASUREMENTS OF ADULT SKULLS IN MILLIMETRES.

BUSHMEN.

Locality whence collected and tribe when known.	Anatomical Museum, Cambridge: Transvaal tribe	Transvaal tribe from Craddock	Strandloopers from Port Elizabeth.	Cape, exact origin unknown.	Vesalianum, Basle: Transvaal.	British Museum: Kalahari desert.	Museum of the Royal College of Surgeons: Capetown.	Earthman Bushmen Settlement, Eastern Province.	Cape Colony.
Catalogue number	1751	1738	1742	1743	1744	24 / 7	23 / —	M13	34, 4, 25, 1 / 94, 4, 25, 2	1301	1300	1302	1303	1303B	1303C	1303D	1303E	1303G	1304	1305	1624	1625	1626	1628	1623
Sex	m	f	f	f	m	f	m	m	m	f	m	f	m	f	m	f	m	m	f	f	m	f	f	f	f
Cranial capacity in c.c.	—	1320	1515	1185	1355	1060	1085	14·5	1220	—	1250	1260	1170	1400	111	—	1235	1280	1505	1360	1075	1292	1400	1190	1190	1410
Maximum length	187	187	182	169	182	162	164	182	177	185	170	173	169	184	170	181	177	172	189	179	170	184	172	173	173	179
Maximum breadth	133	139	143	135	137	126	126	140	138	135	133	134	130	140	134	137	131	137	139	137	132	126	125	135	140	137
Basio-bregmatic height	130	132	126	123	129	121	121	134	126	133·5	124	128	125	134	123	127	120	125	126	119	123	124	121	127	126	124
Minimum frontal breadth	95	98	96	91	98·5	94	92	96	97	99	95	86	93	101	93	94	88	95	98	93·5	88	91	93	92	86	96
Maximum frontal breadth	115	118	119	111	112	112	108·5	—	107	118	111	111	113	121	113	110	108	116	117	110	106	106	107	110	105	115
Biorbital breadth	106	118	119	111	107	100	103·5	—	105	113	107	111	113	115	111	110	105	115	116	108	105	106	107	110	—	118
Physiognomic breadth	109	106	99	99	107	100	99	—	104·5	110	97	104	107·5	112	99	107	102	105	111	106	93	95	109	98	107	111
Asterion breadth	106	108	105	106·5	108	101	101	—	106·5	110	104	109	103	112	101	105	101	108	108	104	100	112	105	95	104·5	92
Basion-nasal length	105	95	95	99	95	94	98	97	97·5	102	91	91	90	103	98	93	94	90	93	92	—	94	89	85	88	98
Basion-alveolar length	111	99	91	92	98	93	103	91	98	96	90	—	87	—	93	100	93	92	91	90	—	98	87	87	87	99
Foramen magnum length	37	39	41	37·5	39	36·5	33	—	41	38·5	—	35	35	35	31	34	36	36	36·5	37	36	36·5	33	36	35	34
Foramen magnum breadth	29·5	29	28	29	28	33	29	—	31	28	24	27	30	31	30	33	29	28	30	30	30	28	28	29	25	28
External biorbital breadth	108	116	100	103	110·5	101	102	—	109	109·5	101	104	101	109	103	105	98	105	102	98	—	103	105	95	99	105
External biorbital breadth	98	104	93	95	101	91	95	—	102	99	95	94	96	101	96	98	92	95	95	88	—	101	97·5	84	93	97
Bigonial breadth	124	117	108	105	114	105	106	—	122	115	101·5	112	101	117	107	114	102	108	107	107	—	114	109	99	105	112
Bizygomatic breadth	129	129	105	105	108	103	103	—	123	111	101	110	100	113	105	112	102	104	100	100	—	113	106	98	97	108
Basi-cranial length	108	97	81·5	94	98	82	84	95	91	93	86·5	92·5	97·5	97	85	90	90	84	85	95	—	104	90	82	88	91
Basi-facial breadth	—	127	116	120	124	116	120	122	136·5	—	112	120	111	133	116	118	115	117	119	118	—	125	117	108	115	123
Ophryo-alveolar height	96	84	74	83	94	81	85	—	91	87·5	84	—	82	85	80	80	85	83	77	82	—	96	81	78	—	78
Nasio-alveolar height	70	66	52	66	65	59	65	—	60	65	61	—	62	59	62	68	61	59	53	59	—	66	60	55	56	59
Spheno-alveolar height	21	20	14·5	24	21·5	18	21	—	16	23	17	—	18	—	19	22	22	22	18	17	—	22	21	16	15	17
Ophryo-nasal height	147	126	—	126	—	121	126	—	—	—	124	—	118	—	118	—	—	126	—	119	—	—	116	—	—	118
Naso-nasal height	122	107	—	107·5	—	100	106	—	—	—	101	—	97·5	—	101	—	—	102	—	97	—	—	94	—	—	98
Height of the cheek-bones	25·5	20·5	20	21	22	16	17	—	21	15	21	21	18	R26 / L22	19	22	19	23	16	23·5	—	24	20	21	18	18
Orbital breadth	40	40·5	36	37	38	37	39	R35 / L43	40	39	37	38	38	40	36	39	35	37	37	34	—	37	38	33	34	39
Orbital height	33	33	27·5	29	31	33	R36 / L37	28	32·5	36	32	29	31	30	30	31	32	28	32	30	—	31	31	30	29	33
Biolachry breadth	21	21	18	20	23	20	19	—	23	22	21	23	22	22	25	26	24	22	22	22	—	24	22	20	23	20
Nasal height	49	47	38	43	44	41	45	41	45	41	44	46	44	48	45	48	44	43	45	43	—	45	39	40	43	42
Nasal breadth	25·5	31	25	23	26·5	23	24	27	27	25	24	29	27	29	24	25	24	25	25	26	—	28	27	22	21	25
External palatine length	64	60	47·5	51	52	53	61	—	55	50	44	—	48·5	—	48	55	52	50	46	50	—	53	47·5	44·5	—	52
Internal palatine length	58	57	41	46	45	—	54	—	50	46	41	—	44	45	44	51	48	46	42	47	—	47	40	38	—	46
External palatine breadth	71	62	54	53	58	57·5	56	—	62	61	56	—	60	—	55	57	56	53	52	60	—	66	53	55	—	—
Internal palatine breadth	38	37	—	35	34	33	31	—	35	36	33	—	34	36	33	39	31	32	35	34	—	45	26	30	—	40
Ant-mo. palatine breadth	44	39	—	39	39	36	39	—	45	41	35	—	40	—	34	38·5	37	38	44	41	—	45	34	38	—	40
Dental length	46	—	—	—	38	—	45	—	39	—	40	—	39·5	—	—	—	43	43	—	—	—	43	—	—	—	43
Submalar	105	110	99	100·5	108	102·5	105	—	110	104	101	99	101	107	101	103	98	100	102	98	—	102	105	90	—	104
Sub-cerebral	29	19	21·5	28	30	21·5	20	—	28	21	24	24	—	25	18	21	21	24	22	22	22	29	20	23	—	19
Total frontal	121	125	131·5	127	133	112	112	—	122	127	121	130	—	142	114	129	122	140	123	125	120	135	127	132	—	119
Parietal	126	135	127	117	132	120	117	—	108	128	121	—	—	129	—	126	119	109	120	115	120	114	116	—	110	119
Sagittal-occipital	58	—	—	—	—	51	49	—	70	65	56	—	—	51	—	62	61	60	65	—	61	60	55	65	—	65
Curves: total occipital	106	122	102	105	106	94	100	—	112	116	107	—	—	103	—	114	111	104	121	113	102	112	115	112	—	121
total sagittal	353	382	360	349	371	326	329	—	342	371	340	—	—	371	342	393	352	353	373	363	337	367	356	360	—	359
supra-auricular	290	297	294	279	304	270	279	—	285	296	278	—	—	305	282	293	271	290	289	282	277	270	275	291	—	297
total transverse	433	445	427	406	415	388	408	—	423	440	395	—	—	450	415	420	400	410	419	407	398	403	393	404	—	419
pre-auricular	231	234	230	229	225	217	223	—	231	220	216	—	—	257	230	250	232	226	216	243	242	222	225	221	—	236
total horizontal	514	530	521	495	511	462	496	—	500	519	487	500	477	521	483	512	494	482	523	503	480	495	482	485	—	503

Indices.

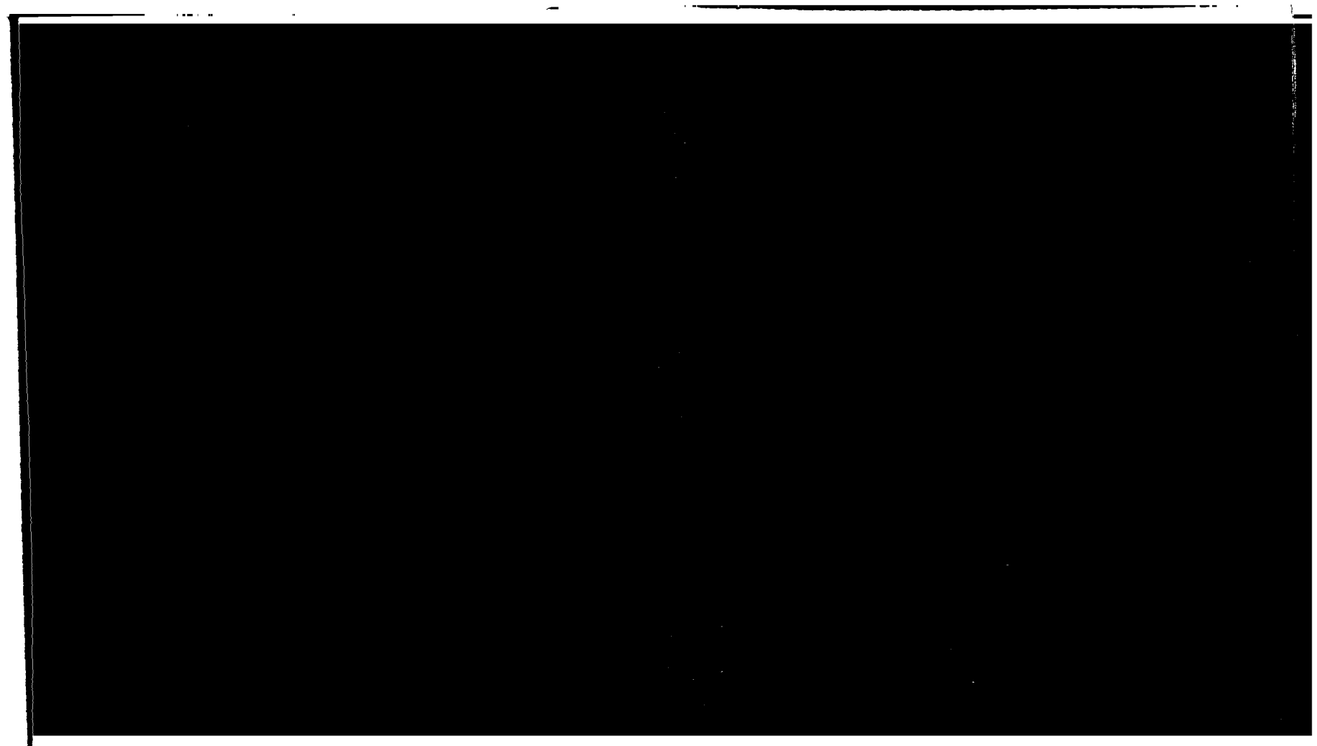
Length-breadth	71·1	74·4	78·6	76·9	75·3	77·8	76·8	76·9	77	78·4	78·2	77·5	76·9	78·1	73·8	75·7	74	73·7	73·5	76·5	77·6	73·5	72·7	77	75·1	76·5
Length-height	69·5	70·6	69·2	72·8	70·9	74·7	73·8	74·6	71·2	72·2	72·9	71	74	72·5	72·4	70·2	67·8	72·7	69·7	69·8	70	66·5	72·1	69·9	73·4	70·4
Breadth-height	97·7	94·9	88·1	81·7	91·2	96	96	95·7	91·3	93·9	93·2	95·5	96·2	93·7	1·8	92·3	91·6	91·2	90·6	91·2	90·2	97·6	99·6	97·7	92	93
Upper facial (Kollmann)	—	52	44·8	46·7	52·5	50·9	51·2	46·7	44	—	51·5	—	55·2	44·45	43·4	57·6	55·7	50·4	44·5	50	—	52·7	51·3	50·9	48·7	48
Upper facial (Broca)	—	66·1	63·8	69·2	75·9	69·8	70·8	—	66·7	—	73·9	—	76·3	63·96	65	75·4	73·9	74·9	64·5	69·5	—	75·8	76·3	74·2	—	63·4
Total facial (Kollmann)	—	84·3	—	81·2	—	84·2	88·3	82	—	—	—	—	87·5	—	87	—	—	87·2	—	90·8	—	—	80·3	—	—	79·7
Total facial (Broca)	—	109·2	—	116·7	—	104·3	110·2	—	—	—	106·7	—	106·7	—	101·7	—	—	107·2	—	110·8	—	—	100·9	—	—	95·9
Maxillary facial (Virchow)	61·8	58	63·8	66·7	66·5	72	77·4	60	65·9	69·9	70·5	—	69·6	69·8	72·1	68·7	71·1	70·2	62·4	62·1	—	63·5	66·7	67·1	63·6	61·8
Orbital	84·6	81·5	76·4	78·4	81·6	80·2	R92·3 / L 94·9	R 73·6 / L 65·1	81·3	92·3	86·5	76·3	81·6	75	83·3	79·5	94·3	75·7	86·5	88·2	—	83·8	81·6	90·9	85·3	84·6
Nasal	60·2	66	65·8	53·5	60·2	50·1	53·3	65·8	60	61	54·5	63	61·4	69·4	53·3	52·1	54·5	58·1	74·3	58·1	—	61·2	69·2	55	55·8	50·5
Palatal (staphylinic)	65·5	64·9	—	76·1	75·6	70·2	57·4	88·9	70	78·3	80·5	—	77·3	80	75	76·5	64·6	69·6	83·3	72·3	—	95·7	75	78·9	—	87
Palatal (uranic)	110·9	103·3	113·7	103·9	111·3	107·5	91·8	—	112·7	122	127·3	—	125	—	111·6	127·3	107·7	106	—	120·2	—	124·5	111·6	123·6	—	120
Alveolar	103·7	104·2	95·8	102·2	103·2	102·3	110·2	91	100·5	91·1	98·9	—	94·9	107·5	102·4	107·5	102·7	102·2	97·8	97·8	—	104·3	97·8	102·4	98·9	101
Dental	45·8	—	—	—	—	—	45·2	—	—	40·2	42·9	—	43·7	—	40·3	—	—	42·9	—	43·7	—	45·7	—	—	—	45·1
Fronto-zygomatic	—	92·9	102·6	92·5	90·3	96·6	90·4	—	71·1	—	99·1	94·2	101·8	91	97·4	100·8	94·9	99·1	98·3	93·2	—	84·8	91·5	101·9	91·3	95·9
Nasio-nasal	107·1	106·8	106·4	105·8	106·9	109	110·3	—	107·9	105·1	106·1	105·6	105·9	105·9	104·3	105·1	104·6	105·2	107·1	111·4	—	100·9	107·9	107·2	—	107·3
Relation maximum frontal breadth: maximum breadth	71·5	70·4	67·1	67·4	71·2	74·6	73	—	70·3	73·3	71·4	64·2	71·5	72·1	69·4	68·6	67·2	69·3	70·5	68·2	66·7	72·2	74·4	68·1	66·2	70·1
Relation basi-spinale: breadth-maximum breadth	79·7	82·7	83·9	80·7	78·1	86·5	86·1	—	76·1	83·7	80·5	82·8	86·9	82·1	82·8	80·3	80·2	83·9	83·5	78·8	79·5	84·1	85·6	81·5	—	84·5
,, asterion-breadth-maximum breadth	82	76·2	79·2	73·3	78·1	79·4	78·6	—	75·7	81·5	75·2	79·3	77·6	82·7	80	73·9	78·1	77·9	79·9	75·2	79·5	75·4	76	74·1	75·4	78·1
,, asterion-breadth-maximum breadth	79·7	77·6	73·4	74·2	78·8	80·2	79·4	—	77·2	81·5	78·2	81·3	79·2	80	75·4	73·7	77·2	77·7	77·7	76·6	81·8	82·5	80	83	80·8	80·3
,, subcerebral-total frontal curve	24	15·2	16·3	22	22·6	19·2	17·9	—	23	16·5	19·8	18·5	—	17·6	15·8	16·3	17·2	17·1	17·9	17·6	18·3	21·5	15·7	17·4	—	16
,, frontal total-sagittal curve	34·3	32·7	36·5	36·4	35·8	34·4	34	—	35·7	34·2	34·7	—	—	38	34·3	35	34·7	39·7	33	34·4	35·6	36·8	35·7	36·7	—	34
,, parietal-total sagittal curve	35·7	35·3	35·3	33·5	35·6	36·8	35·6	—	31·6	34·5	34·7	—	—	34·5	—	34·1	33·8	30·9	31·6	34·1	34·1	32·7	32	32·2	—	31·4
,, occipital-total sagittal curve	30	31·9	28·3	30·1	28·6	28·8	30·4	—	32·7	31·3	31·7	—	—	27·5	—	30·9	31·5	29·5	32·4	31·1	30·3	32·3	31·1	—	—	31·6
,, supra-auricular-total transverse curve	67	66·7	71·2	67·5	72·5	69·6	68·9	—	67·4	67·3	70·4	—	—	67·8	69·9	69·8	67·7	70·7	69	69·3	69·6	67	72	—	—	70·9
,, pre-auricular-total horizontal curve	44·9	44·2	44·1	43·5	44	46·9	47·9	—	46·2	42·4	44·4	—	—	49·3	47·6	48·8	47	46·9	41·3	48·3	50·4	44·8	46·7	45·6	—	46·9

HOTTENTOTS

Locality whence collected and tribe when known.	Anatomical Museum, Cambridge: Transvaal	Cape Colony	from Kommetjie Craddock	Basle: Cape Colony.	British Museum: Cape Colony	Museum of the Royal College of Surgeons: Cape Colony	Whittlesea; North Victoria; Cape of Good Hope.	Cape Colony.	Slabdi, Colony.	Kitchen midden near Cape St. Francis	Kommetjie	from a cave in Makapan's country, and probably belonging to the tribe of that name.	Cape Colony.	Graham's Town, Cape of Good Hope.	Cape Colony.
Catalogue number	1758	1739	1747	M7	34, 4, 9, 1	1303A	1303F	1296	1298	1298A	1299	1299A	1299B	1299C	1299D	1299E	1299F	1622	1618	1619	1620	1621
Sex	—	—	m	m	f	m	m	m	f	f	m	f	m	f	m	n	f	f	f	f	f	
Cranial capacity in c.c.	—	1530	1420	—	1185	—	1430	1490	1380	1320	1490	1445	1350	1275	1305	1530	1340	1312	1272	1370	—	—
Maximum length	182	187	184	186	178	185	189	185	178	179	191	184	185	182	178	181	175	174	169	181	178	179
Maximum breadth	130	135	137·5	130	131	136	135	130	135	141	140	129	128	124	128	131	127	133	129	136	131	138
Basio-bregmatic height	130	122	121	132	122	121	132	138	130	123	134	133	128	129	128	128	126	122	119	142	131	124
Minimum frontal breadth	92	93	96	91	91·5	91	105	100	96	93	95	91	98	91	96	87	—	104	91	97	91	94
Maximum frontal breadth	111	116	119	—	104	111	115	111·5	117	115	115	116	108	109	112	115	—	114	114	114	114	117
Biorbital breadth	105·5	116	95·5	—	95	107	113	107	117	115	115	113	108	107	112	114	—	114	111	112	109	117
Physiognomic breadth	100	108	108	87·7	103	113	114	110	110	110	116	110	102	97	98	100	—	110	102	104	102	108
Asterion breadth	104·5	92	99	101	98	97	102	107	98	94	98	95	95	90	96	96	87	98	96	95	96	102
Basion-nasal length	93	95·5	93	95	95·5	93	95	102	90	93	104	95	100	95	91	94	91	99	91	100	93	101
Basion-alveolar length	103	98	97	105	95·5	93	96	112	90	93	104	95	100	95	94	100	89	99	94	101	96	102
Foramen magnum length	35	41·5	36	34	37	35	38	38	34	37	35	38	34	34	39	38	—	42·5	32	35	34	37
Foramen magnum breadth	27·5	33·5	29	30	30	30	29	30	30	29	30	30	28	27	27·5	30	—	32·5	27	28	27	28
External biorbital breadth	103	113	113	117	105	104	104	104	100	104	104	100	104	100	104	100	94·5	103	98·5	104	105	107
External biorbital breadth	96·5	101	101	109	97	94	95	94	94	95	95	99	94	94	95	85	—	101	90	95	88	95
Bigonial breadth	116	114	117	—	106	110	117	127	112	107	117	117	115	106	107	96	—	120	100	120	112	108
Bizygomatic breadth	103	111	119	—	103	—	112	124	111	107	114	112	106	104	104	93	—	109	98	107	99	103
Basi-cranial length	95	96·5	105	95	89	98	92	100	89	90	100	99	96	90	87	81	—	96	81	90	87	91
Basi-facial breadth	118·5	124·5	131	130	118·5	124·5	130	137	121	117	131	—	124	—	116	—	—	133	109	—	111	121
Ophryo-alveolar height	89·5	85	84	—	89	98	92	102	89	88	96	82	96	82	74	91	—	92	81	87	74	76
Nasio-alveolar height	64	61	61	61	58	58	65	69	55	66	—	63	63	57	55	63	—	63	53	62	57	58
Spheno-alveolar height	24	18	18	21	14	29	19	23	—	17	19	19	17	19	—	17	—	24	17	16	17·5	—
Ophryo-nasal height	128	—	—	111	—	118	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Naso-nasal height	103	—	—	113	—	98	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Height of the cheek-bones	21	23	21	25	18	19·5	25	20	19·5	21	17	17	—	21	18	22	19·5	18	—	—	—	—
Orbital breadth	36	39	{ R40 / L39 }	43	39	36	37	37	36	37	38	34	—	37	36	35	34	39	—	—	—	—
Orbital height	33	31	34	31	32	27	32	34	39	32	30	33	30	33	36	33	32	30	29	33	31	32
Biolachry breadth	23	22	25	24	21	21	21	24	20	24	23	22	30	26·5	22	19	22	23	—	—	—	—
Nasal height	44	45	45	44	45	40	48	47	55	43	38	45	36	46	41	46	43	42	42	43	42	42
Nasal breadth	24	23	27	27	25	25	27	25	28	26	22	22	22	30	27	25	24	28	25	28	26	28
External palatine length	52	49	52	50	45	52	50	45	52	50	46	50	—	55	53	53	52	54	51	50	—	54
Internal palatine length	45	41	46	53	42	48·5	54	50	47	48	47	46	—	47	44	51	49	48	47	46	—	47
External palatine breadth	55	58	60	62	58	57	54	56	58	59	57	54	—	59	57	53	53	52	54	53	53	54
Internal palatine breadth	33	37	35	37	38	32	41	37	40	37	29	27	—	31	31	—	—	31	—	—	—	—
Ant-mo. palatine breadth	39	34	39	38	37	40	42	40	—	42	—	—	—	39	—	—	—	—	—	—	—	—
Dental length	40	—	43	40	—	41	42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Submalar	102	104	109	117	101	102	98	—	—	—	—	—	—	—	—	—	—	—	104	110	—	—
Sub-cerebral	25	—	32	24	20	25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total frontal	115	—	135	123	133	135	130	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parietal	118	—	120	126	122	124	134	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sagittal-occipital	60	—	70	60	70	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Curves: total occipital	168	—	119	110	108	109	119	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
total sagittal	341	—	374	361	363	368	383	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
supra-auricular	275	—	293	292	306	305	295	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
total transverse	398	—	421	450	432	426	438	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
pre-auricular	235	230	247	230	211	242	252	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
total horizontal	480	509	525	507	502	488	533	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Indices.

Length-breadth	72	76·5	74·7	69·9	73·7	73·5	71·4	70·3	75·8	78·8	73·3				
Length-height	72·5	70·9	70·1	75·9	70·5	65·4	69·8	74·6	73	68·7	70·2				
Breadth-height	100·8	93·2	92·3	108·6	96·3	96·3	98·3	87·2	95·7	87·2	95·7				
Upper facial (Kollmann)	53·5	51·7	50·9	46·7	49·7	50·4	48·6	49·7	49·6	49·6	49·6				
Upper facial (Broca)	74	73·1	71	—	—	73·5	68·5	64·6	67·9	67·8	66·7	69·5			
Total facial (Kollmann)	86·9	—	—	87·7	85·5	88·3	—	—	82·5	—	83·8	—			
Total facial (Broca)	—	102·2	101·6	—	—	108	—	—	105·1	—	100·9	—			
Maximum facial (Virchow)	71·9	65·3	66·3	64	65·2	65·6	65	—	—	—	—	—			
Orbital	R80·9 / L83·6	78·9	81·6	90	91·7	79·5	R85 / L87·2	72·1	82	75	86·5				
Nasal	66·7	62·8	58·2	50·5	54·5	51·1	59	61·4	57·8	62·5	56·3				
Palatal (staphylinic)	63·7	85	83·3	64·5	73·3	84·1	76·1	69·8	90·5	66	77·9				
Palatal (uranic)	97·4	115·4	120	—	105·1	128·9	109·6	117·8	109·6	117·8	113·2				
Alveolar	97·9	95·9	88·2	101	104·7	94·8	102·2	106·1	102·4	107·7	113·2				
Dental	44·3	41·7	44	—	40·2	—	45·1	42·9	—	—	—				
Fronto-zygomatic	77·2	96·8	87·7	81·4	96·7	98·3	87·8	85·3	87·6	87·6	87·6				
Nasio-nasal	104·5	106·2	107·9	107·7	104·1	108·2	103·7	104·1	106·2	107·9	106·7				
Relation maximum frontal breadth: maximum breadth	68	65	69·8	—	69·8	66·9	77·8	76·9	71·1	66	67·9				
Relation basi-spinale: breadth-maximum breadth	81·3	81·1	81·1	—	72·5	78·7	83·7	82·3	85·7	81·6	66·4				
,, asterion-breadth-maximum breadth	77·1	72·7	80·4	—	76·4	79·4	80	82·3	78·5	74·5	74·3				
,, subcerebral-total frontal curve	80·9	80·4	80·2	—	74·5	83·1	84·4	84·6	81·5	74·5	80				
,, frontal total-sagittal curve	21·7	—	15·6	25·6	18	14·8	19·2	—	—	—	—				
,, parietal-total sagittal curve	34·7	—	36·1	34·4	36·6	36·7	33·9	—	—	—	—				
,, occipital-total sagittal curve	33·1	—	32·1	34·9	33·6	33·7	35	—	—	—	—				
,, supra-auricular-total transverse curve	69·1	—



Crania *of* African Bush Races.

By F. Shrubsall, Esq., B.A.

[with plate xvi.]

Before proceeding to the consideration of this subject, I desire to thank Professor Stewart, curator of the museum of the Royal College of Surgeons, and Mr. Oldfield Thomas, of the British Museum, for the great kindness with which they afforded me every facility in their power for the examination of the specimens in the collections under their care. I also desire to express my thanks to Professor Macalister for much of the material on which this paper is based and also for valuable help and suggestions during its progress.

In working through any series of crania collected from a wide area, it is well to begin with those of the oldest and presumably least mixed populations, as thereby we obtain a fixed datum from which to proceed. On this account, in my systematic studies of African craniology I have taken the Bush races first, as they are now generally considered to have been among the earliest inhabitants of the southern part of the Dark Continent. Their range of distribution was originally much wider, and it is probable that it is only within the last two thousand years that they have been restricted to their present locality by the pressure of immigrant races.

In this paper I propose to describe the skulls of Bushmen and Hottentots in separate sections, not that craniologically any sharp dividing line can be drawn between them, but rather because the remains of the former compose a tolerably distinct and homogeneous series, while those of the latter exhibit various transitional types intermediate between the Bush race proper and the surrounding Kaffir and Negro tribes.

In the table of seriations I have included the indices given for Bush crania by Fritsch, Rolleston, and Sir William Turner in their respective memoirs.

I.—*Bush Race of South Africa.*

These aborigines are fast disappearing, and are now only to be found as a few scattered groups along the south bank of the Orange river, in some of the valleys of Griqualand, and in isolated localities in Kaffraria. They still survive, however, in greater

numbers in the fastnesses of the Kalahari desert and along the border-line of Bechuanaland and German South-west Africa. Their remains are to be found throughout the whole of Cape Colony, especially along the sea-coast from Cape Agulhas to Algoa Bay.

I have measured twenty-six crania belonging to this ethnic group, the number being made up of three Strandloupers, or coast Bushmen, from Port Elizabeth and two Bushmen of the Transvaal tribe which are in the Anatomical Museum at Cambridge, one of the Transvaal tribe in the Vesalianum at Basle, two skulls from Khama's country, north of British Bechuanaland, found in the Kalahari desert (long. 26° E., lat. 20° S.) by Mr. R. T. Cunningham and by him deposited in the British Museum, the tale being completed by sixteen crania in the museum of the Royal College of Surgeons.

We may commence detailed observations by an examination of the *cranial capacity*, which was in every case taken by the modification of Broca's method introduced by Sir William Turner, with the exception that separate litre and half-litre measuring tubes were employed instead of the two-litre vessel as used by him. The mean of at least three measurements of every skull was taken, any observations differing by more than 10 c.c. from the average being rejected. In the table of measurements I have included the capacities of the crania in the museum of the Royal College of Surgeons as given in the catalogue, pressure of time having prevented me from recubing them. It is at once apparent that while there is a considerable range of individual variation among skulls belonging to the Bush race, yet the great majority are microcephalic, having a capacity of less than 1350 c.c. The measurements of the series of male skulls are very concordant, the one from the Transvaal in the museum at Basle having a capacity of 1405 c.c., the male Strandlouper one of 1355 c.c., while the cranium from the Kalahari desert has the smaller volume of only 1220 c.c., the average capacity for all the male skulls examined being 1327 c.c. The female series, however, is not so homogeneous, one of the Strandloupers running up to the high figure of 1515 c.c., while the second has a capacity of only 1185 c.c ; the specimen from the Transvaal tribe has also the considerable capacity of 1390 c.c., thus raising the average of the series to 1363, whereas the greatest capacity previously recorded for female crania of the Bush race was 1360, being that of a skull in the museum of the College of Surgeons. More capacious male crania had, however, been noted by Turner and also by de Quatrefages and Hamy. Comparing the foregoing averages with those embodied in previous descriptions, we find—

	Male.	Female.
Cambridge Collection	1327	1363
Collection of Royal College of Surgeons ..	1400	1214
Barnard Davis Collection	1304	1274
Turner. "Challenger" Report	1319	1092
Fritsch, "Sud Afrikas Eingeborenen" ..	1352	1214

To this comparison there is, however, the considerable drawback that the capacities were not taken in the same manner in all instances.

The mean in cases where the crania were cubed with shot appears to be—male 1331 c.c., female 1255 c.c., giving a mean sexual difference of 76 c.c.

The following table contrasts Bush skulls with other similar races:—

	Male.	Female.
Bushmen	1331	1255
Akkas	1102	1072
Andamanese	1244	1128
Sicilian Pigmy	1031	—
Schaafhausen Pigmy	1207	—

Viewed in *norma verticalis*, these crania usually present the appearance of a fairly uniform, occipitally elongated oval, with well-developed frontal and parietal eminences, the former being either separate and distinct or fusing across the mid-sagittal line. In some cases both frontal and parietal eminences are distinct enough to give the skull the appearance, when viewed in this norma, of having been annularly compressed along the line of the coronal suture. Such crania would be described by Professor Sergi as rhomboid. The cranial vertex is somewhat flattened, such flattening being especially noticeable between the parietal eminences in the neighbourhood of the obelion. The coronal, sagittal, and lambdoid sutures are remarkably simple, and wormian bones especially at the lambda are conspicuous by their absence. Only one skull in the whole series examined is metopic: this skull is also characterised by a large median wormian bone in the hinder part of the sagittal suture. Normally there is no median sagittal ridge, but some of the inland crania have traces of it with a marked groove on the posterior half of the parietal bone in which the suture lies. The majority of skulls are cryptozygous, but in some of the Transvaal specimens the zygomatic arches are just visible, and

indeed the prominence and strength of these processes is a distinguishing feature of the Transvaal and Kalahari tribes as compared with the Strandloupers from the south-eastern seaboard of Cape Colony.

The mean transverse dimensions of the cranial vault appear in the following table :—

Diameter.	Male.		Female.	
	Absolute measurements in millimetres.	Relative to max B = 100.	Absolute measurements in millimetres.	Relative to max. B = 100.
Minimum frontal	97	71·3	96	69·6
Maximum frontal	111	81·6	121	87·7
Bi-stephanic	103	75·7	115	83·3
Inter-pterial	107	78·7	103	74·6
Bi-asteric	107	78·7	107	77·5
Maximum transverse ..	136	100	138	100

The narrowness of the female crania at the level of the pterion and their relative breadth above that point brought out in this table is worthy of notice. To this character the name stenocrotaphism has been given.

The mean *fronto-zygomatic index* of Bushman skulls is—for males 90·3, for females 96 and for both sexes together 94·6. *Cf.* Hottentots, 93·2; Andamanese, 87·6; Negroes, 84·5.

The *stephanio-zygomatic index* is 86·3 for males and 92·3 for females. *Cf.* Hottentots, 93·2; Kaffirs, 88·8.

The mean *cephalic index* of the skulls in the Anatomical Museum at Cambridge is 73·2 in the case of males and 77·6 in that of females. The male skull from the Transvaal at Basle has an index of 76·9, while the indices of those from the Kalahari desert are 78 and 78·4 for male and female respectively. The total mean for all the Bush crania examined is—male 75·2, female 76·8, practically identical with the numbers given by Turner in the "Challenger" reports, viz. 75·8 and 76·5, and close to those quoted by Fritsch in his monograph on the aborigines of South Africa: 74 and 75·2. The total mean index of 75·2 given by Turner for all the thirty-six Bush crania of which measurements were then available becomes, when the additional skulls described in this paper are incorporated, 75·4.[1] *Cf.* Akkas, 77·5; Andamanese, 81·6; Sicilian Pigmy, 71·2; Schaafhausen Pigmy, 71·4.

Comparisons of the distribution of the indices of the Bush

[1] The average index of the Netley Collection is 75·9.

skulls, according to Broca's classification, are shown in the following table, the first two divisions containing only crania whose measurements are given at the end, the third comprising also those described by Sir William Turner, Fritsch, and others:—

	Male.	Female.	All Crania.
Brachycephalic	—	—	—
Sub-brachycephalic	—	—	3·4
Mesaticephalic	14·8	40·9	15·5
Sub-dolichocephalic	44·4	27·3	46·5
Dolichocephalic	40·7	31·8	34·5

When the skulls are viewed in *norma lateralis*, the most prominent features are the fulness of the forehead, the want of projection of the face as a whole, and more especially of the nose, and the fulness and backward projection of the occipital region.

The face is much flattened, the nasal bones being almost invisible in profile, and the alveolar border of the maxilla but slightly projecting, while the incisor teeth are set in their sockets scarcely, if at all, obliquely. The chin in the majority of instances is weak and receding, while the malar bones, on the other hand, are voluminous and prominent. This group would appear to be one in which the *alveolar index* of Sir William Flower is not very reliable as a race character, the range 91–107·5 being very great, far greater indeed than the variations of prognathism as estimated by the eye, to which almost all Bush crania appear orthognathous.

The mean index for males is 101·5 and for females 99·2, as compared with 96·5 with a range of 9 units and 99·8 with a range of 5 units, the figures given by Sir William Turner in the "Challenger" report.

The same difficulty with regard to the wide range of variation of prognathism in otherwise typical skulls has been noted by the authors of "Crania Ethnica" in the course of their description of the Hottentot-Bushman ethnic group.

The distribution among the various groups is indicated in tabular form below:—

	Male.	Female.
Orthognathous	40	46·7
Mesognathous	26·7	46·7
Prognathous	33·3	6·7

Cf. Akkas, 106·5; Andamanese, 102; Sicilian Pigmy, 88·4.

The profile of the forehead is in most cases continued by that of the upper part of the nasal bones, the nasion not being at all depressed, and the glabella only slight, although superciliary ridges are rather more plainly marked. Among the inland Bushmen, however, the face has a sterner appearance, the glabella being more prominent and overhanging the root of the nose, while the superciliary ridges are much stronger.

The forehead in all cases is full and rounded, and the sagittal curve is vertical for the anterior third of the frontal bone, on the average the sub-cerebral portion contributing in the male 23·3 and in the female 17·8 per cent. of the total frontal curve. Among the marked features of the sagittal curve in South African races are, firstly, a transverse post-bregmatic concavity extending for about a quarter of the length of the parietal bone, producing an appearance as if the head in this region had been submitted to annular compression, and, secondly, a well-marked flattening of the curve and of the cranial vertex in the region of the obelion, both these latter points being perhaps rather plainer in Kaffir than in Bush skulls. In many calvaria of the latter race, there is a distinct prominence and bulging out of the squama of the occipital bone, or it may be of the whole occipital region. This condition (frequently associated with wormian ossicles along the line of the lambdoid suture, which are, however, almost invariably absent in Bushman crania) is rare among Europeans, unusual in the northern Negroes, present occasionally among the more southerly Bantu-speaking peoples, though fairly common among the Hamitic races.

From the inion, which is poorly marked, the sagittal curve passes gently downwards and forwards to the opisthion, the bone in this region being smooth and but slightly marked by muscular impressions.

In the following table will be found the relative measurements of the components of this curve, the lengths of the various portions being contrasted with the total sagittal curve (= 100):—

	Frontal.	Parietal.	Occipital.
Male	35	35·6	29 3
Female	35·2	34 7	30 1

The ratio of the pre-auricular to the total horizontal curve (= 100) is in males 44·4 and in females 43·9.

Conspicuous features in this norma are the well-marked linea temporales, bounding the temporal fossa and curving round the posterior border of the parietal bone to join the inner, the strong post-zygomatic ridge, and the outer, a ridge running on to the

mastoid, gradually becoming more prominent till it ends at the tip of the process. The mastoid process is small, but roughened, and strongly marked with an unusually well cut digastric groove. Between the above ridges there passes a narrow, fairly deep supra-mastoid groove, running in a curved manner down the temporal bone and causing the mastoid process to stand out with a distinctly greater prominence than one would expect from consideration of its size alone. This association of a prominent supra-mastoid groove with small, well-cut mastoid processes would appear to be a distinctive feature of the skulls of the Bush-Hottentot ethnic groups, and its presence or absence is a guide of some value in all attempts to decipher the affinities of the various tribes of South Africa from a study of their osteological characters.

In Bush crania the squama of the temporal bone is somewhat flattened, but the zygomatic fossa is shallower just below the level of the squamous suture than above it. The temporal bone is separated by a broad, deep, well-marked groove or gutter from the lateral surface of the frontal, which bulges out into the temporal fossa, giving an irregular appearance.

The pterion, except in one case (which has a fronto-squamosal articulation), is of the normal H or N shape, although the process of the great wing of the sphenoid is usually very long and narrow. In only one instance is there a wormian bone in this situation, and anomalies of articulation of any kind are rare. In one skull the lips of the spheno-squamous suture project outwards as a ridge passing on either side down the fossa, the anterior third of which it converts into a deep gutter. The conceptaculæ cerebelli are full and well developed, so that most of the skulls rest upon them when placed on the table: but in some of the inland Bush crania the mastoid processes are of sufficient length to act as supports in this position in the place of the conceptaculæ or the occipital condyles.

The relation of length to height as seen in this norma is expressed by the altitudinal index 70·8 in the male and 71·2 in the female, so that the Bush skulls would appear to be orthocephalic, though on the border-line of chamæcephalism. *Cf.* Akkas, 76·1; Andamanese, 77·9; Sicilian Pigmy, 77·3.

Classifying the crania according to this index, we obtain the following table of percentages:—

	Male.	Female.
Chamæcephalic	42·3	40·9
Orthocephalic	46·2	59·1
Hypsicephalic	11·5	—

Viewed in *norma occipitalis*, the cranium sometimes appears pentagonal, with flattened sides, but more often the roof is rounded off in a wide curve. This flattening of the vertex is usually given as a characteristic of skulls of the Bush race.

The *breadth-height index* is 96 in males and 91·4 in females, the percentages in the various divisions being—

	Male.	Female.
Akrocephalic	6·7	21·1
Metriocephalic	80	31·6
Tapeinocephalic..	13·3	47·4

The relationship of the supra-auricular portion to the total transverse curve (= 100) is in the male 69·7 and in the female 68·5.

Norma facialis.—Turning from a study of the cranium to examine the face, there appears at first sight to be a comparative uniformity throughout the entire series, which greatly simplifies the labour of description; and although on closer inspection this is not entirely borne out, the differences which appear are those of degree rather than of kind. In all there is a broad, full forehead, with distinct frontal eminences, prominent external angular processes, rendered yet more conspicuous by a slight depression on the bone superior and internal to them, comparatively large and forwardly projecting cheek-bones, a broad, depressed nose, and a generally orthognathous face, with weak, receding chin. The orbits as a rule are small and microseme, with strong borders and a wide interorbital space, the latter being due to a flattening and widening of the ascending processes of the maxillæ, which in these crania form part of the bridge as well as of the side walls of the nose. The nasal bones, nearly flat from side to side and from above downwards, are set at a very open angle to one another, merely serving to roof in the space between the nasal processes of the maxillæ and not themselves contributing to the prominence of the bridge. The side walls of the apertura pyriformis (which is very broad compared with its height) round off into the floor, and this into the anterior surface of the superior maxilla, the lower border being, however, rather sharper than in the Hottentots or West Coast Negroes.

The nasal spine is very weak and inconspicuous, as in all the black races of Africa, while the upper jaw is broad and slight, with very distinct incisive and canine fossæ. The palate is parabolic, and contains in its alveolar border perfectly healthy,

though frequently much-worn-down teeth. The mandible is slight and characterised by a roughened and frequently everted angle, but especially by a short coronoid process, the sigmoid notch being in consequence remarkably shallow. Considerable variations, however, apart from those due to sex, occur in the degree of prominence of the glabella and superciliary ridges, in the prognathism of the maxilla, and in the obliquity of the teeth in their sockets.

Further details are best brought out by a study of the various facial indices tabulated in order below:—

Superior facial index of Broca.—Mean for males, 69·7; females, 70·2. *Cf.* Hottentots (Broca), 66·6; Kaffirs, 71·7; Akkas, 63·7.

Upper facial index of Kollmann.—Mean for males, 52·5; females, 47·6.

The skulls therefore lie on the border-line between lepto and chamæprosopy, the females being included in the latter class in greater numbers than the males, in whom the face is of a somewhat irregular nature.

The distribution according to a modification of Professor Kollmann's classification (in which a leptoprosope mesocephal division not recognised for European skulls is introduced) is—

	Male.	Female.
Chamæprosope dolichocephals	14·3	—
Chamæprosope mesocephals	21·4	38·5
Chamæprosope brachycephals	—	7·7
Leptoprosope dolichocephals	21·4	15·4
Leptoprosope mesocephals	35·7	38·5
Leptoprosope brachycephals	7·1	—

Owing to injuries to the skull, in several cases rendering it impossible to measure the bi-zygomatic breadth, the *upper facial index of Virchow*, in which the naso-alveolar height is compared with the bi-maxillary breadth, becomes of especial interest. It is in males 65·6 and in females 66·2. *Cf.* true Hottentots, 68·4; Koranas, 64·9; Kaffirs, 75·1; Angonis, 72·7; West Coast Negroes, 66·8.

The results obtained by its employment are thus seen to be very concordant with those derived from the other facial indices, with the great advantage that it can be found for many skulls in which the data for the latter cannot be obtained.

The breadth relations of the face are most clearly seen in a table in which the various diameters are compared with the ophryo-alveolar height (= 100):—

	Jugal.	Malar.	Maxillary.
Male	125·2	125·7	108·3
Female	137·2	135·9	108 9

The mean *orbital index* is for males 78·5, females 84·9, the range in the seriation table being 66–95, with maxima at 76 and 85, showing the comparatively microseme nature of Bush crania. *Cf.* Hottentots (Broca), 84·5; Akkas, 82·9; Andamanese, 91·7; Sicilian Pigmy, 88·9.

The orbits are occasionally asymmetrical, there being a difference of one or two units between the indices on the right and left sides respectively.

The *nasal index* shows a range from 48 to 74, with an average of 60·2 for males and 61·8 for females. *Cf.* Hottentots, 57·6; Akkas, 59·4; Andamanese, 50·9; Sicilian Pigmy, 58·5.

This intense platyrhiny is very characteristic of Bushmen and Bush intermixtures in Africa.

The general features and "cast of countenance" of the facial skeleton can be observed from a combined table in which the facial, orbital, and nasal indices are classified in accordance with Broca's terminology:—

	Male.			Female.		
	Facial.	Orbital.	Nasal.	Facial.	Orbital.	Nasal.
Microseme	45·4	46 4	6 7	25	28·6	—
Mesoseme	18 2	46 4	26·7	16 7	42 9	—
Megaseme	36 4	7·1	66·7	58·3	28·6	100

The mean naso-malar index of Oldfield Thomas is 107·1 in the case of males and 105·9 in that of females, thus showing the crania to be platyopic.

The general form of the parabolic palate is indicated by the subjoined list of indices:—

	Male.	Female.
Staphylinic (Virchow)	70·5	70 3
Uranic (Flower)	111·1	107
Dental	44·5	43·1

The mandible is characterised by the shortness of the coronoid and condylar processes and by the narrow, pointed chin, and has a mean *gonio-zygomatic* index of 73·3. *Cf.* Hottentots, 70·7; West Coast Negroes, 71·4; Kaffirs, 74.

The results of the foregoing measurements may be briefly summarised by describing Bush crania as sub-dolichocephalic, metriocephalic, orthognathic, mesoseme, platyrhine, leptostaphylinic, cryptozygous, and microcephalic.

II.—*Hottentots.*

The Hottentot race is usually subdivided into three main branches:—

The *true Hottentots*, who are found on the western and south-eastern borders of Cape Colony, but in greatest numbers and purest strain in Namaqualand and Southern Damaraland: the *Griquas*, a mongrel stock with a Hottentot basis inhabiting East and West Griqualand at the junction of the Orange and Vaal rivers: and the *Korannas*, or *Koraquas*, surviving in the valleys of the Upper Orange, Vaal, and Modder, and on the banks of the Central Hart river in British Bechuanaland, the tribes on the latter being known as the Korannas of Mamusa.

As far as craniological characters are concerned, the Korannas would appear to be somewhat separated off from the other groups of their race and to more closely resemble the Kaffirs, with whom they have been in contact for a long time, while the Western Hottentots have only in quite recent times come into collision with the eastern and central divisions of the Bantu-speaking peoples by the migration westwards of the Ba-Mangwato Bechuanas, their previous relations having been solely with the Ova-Mpo and Ova-Herrero tribes.

The hill Damaras appear to be intermediate between the Bushmen and the true Nama Hottentots, but as yet specimens for a more detailed study of the populations of this part of Africa are not available.

No hard and fast dividing line can be drawn from craniological evidence between the Hottentots and the Bushmen on the one hand and the negroid races on the other, various transitional forms being found: but in the true Hottentots Bushman characters undoubtedly predominate. This agrees perfectly with the descriptions of Galton in his "Tropical South Africa," where he says, "The Namaqua Hottentot is simply the reclaimed and somewhat civilised Bushman, just as the Oerlams represent the same raw material under a slightly higher degree of polish. Not only are they identical in features and language, but the Hottentot tribes have been and still con-

tinue to be recruited from the Bushmen. Therefore when I say Oerlam, Hottentot, or Bushman, the identically same yellow, flat-nosed, woolly-haired, clicking individual must be conjured up in the mind of the reader, differing only in dirt, squalor, and nakedness according to the term employed."

Indeed, but for the fact that some of the Hottentot skulls show transitional characters towards the Negroes, especially to the tribes of the districts around the great lakes, and that the Korannas present some still more distant resemblances to the Kaffirs, the osteological relics of this race would not deserve a separate description.

For the purposes of this paper, I have examined twenty-two crania, comprising specimens from all the various subdivisions of the Hottentot race, in the Anatomical Museum at Cambridge, in the British Museum, and in the collections of the Royal College of Surgeons. Their distribution is clearly indicated by the headings of the table of measurements.

A distinctive feature of Hottentot as contrasted with Bush crania is the greater capacity, which is on the average 1420 c.c. in male and 1310 c.c. in female skulls, giving a mean capacity of 1365 c.c. for true Hottentots, which thus fall into the mesocephalic division.

The figures for Korannas are somewhat higher, viz., 1455 c.c. *Cf.* Kaffir, 1520 c.c.: West Coast Negro, 1420 c.c.; Central Lakes Negro, 1430 c.c.; *Chinese*, 1425 c.c.

Viewed in *norma verticalis*, true Hottentot crania are of comparatively small size and oval in outline, but those of the Koranna are somewhat anteriorly elongated. Most of the skulls are cryptozygous, but in those of the latter subdivision both mesozygous and phaenozygous forms are met with. There is as a rule a considerable degree of prognathism, which may be prominent in this norma. Viewed in *norma occipitalis*, the skull presents a pentagonal form, with the vault, however, in many cases rounded off into a somewhat flattened arch, this latter condition being met with in the Korannas, while a mid-sagittal keel is more common among the true Hottentots.

In *norma lateralis* characteristic Bushman features appear in all Hottentot skulls, the flattening of the face, especially in the region of the nose, the prominence and size of the malar bones, the fulness of the forehead, the flattening of the vertex, and the deep supra-mastoid groove being especially noticeable. The degree of prognathism varies considerably, but is more marked in the Namaqua than in the Koranna. In true Hottentot skulls the post-bregmatic concavity of the sagittal curve is very conspicuous, in some cases amounting to annular deformation, thus rendering the artificial origin of the former condition very

probable. An occipital *renflement* is less frequent than in Bush crania. The lineæ temporales are plainly marked especially at their terminations, but the temporal fossa as a rule is but small.

The zygomatic arches are somewhat variable in size, but usually strong and prominent, a condition which is correlated with the roughness and eversion of the angle of the mandible as well as with the wearing down of the teeth in the older skulls. The mastoid processes are usually small, but roughened and very sharply cut, this being less marked in tribes which have for a long time been in contact with the Southern Bantus. In most cases the pterion is of the normal H shape, but in three there are fronto-temporal sutures, and in many the process of the great wing of the sphenoid is very narrow. Wormian bones in this situation are not uncommon, and in a considerable number, including all the Koranna, several such bones are found in the squamous suture. The plate of the temporal bone is bulged out in this region, so that the transverse diameter below the suture exceeds that at the lower border of the parietal, the temporal fossæ being correspondingly shallow at this level.

Viewed in *norma facialis*, the characteristic width and lack of projection of the face are at once seen. The flattening is due to the great prominence of the voluminous malar bones, and the variations observed in this norma are due to differences in the depth and distinctness of the infra-orbital fossæ, which are much more conspicuous in the true Hottentot than in the Koranna crania, thus showing the much greater resemblance of the former to those of Bushmen. The interorbital distance is always considerable, and is due to the breadth of the ascending processes of the maxillæ. The nasal bones are usually of moderate size, but are flattened and lie in the same plane. Considerable differences, however, occur in their shape, some skulls having them of about equal width from above downwards, while in others they are much narrower in the middle of their length than at the nasion or their free extremity. In profile only the lower ends of the nasal bones appear, the upper portions being hidden beneath the maxillary processes. In some cases the flattening goes so far that the planes of the superior surfaces of the nasal bones on either side form a re-entrant angle with one another. The apertura pyriformis is very short and broad, the floor being rounded off, though in some cases prenasal fossæ, or simian grooves, are to be found.

The nose is platyrhine, but not so markedly so as in Bushman crania. The forehead is of moderate width, very full and vertical, the frontal eminences usually fusing across the mid-sagittal line, the glabella is very slight, but the superciliary ridges

distinct, neither being quite so well marked as in the Bush race. The orbits are large and usually mesoseme, but considerable variations in shape are to be found in an examination of this series of skulls.

The alveolar processes are rounded and in many cases projecting but the marked prognathism of the Hottentot is mostly dental, the sockets for the incisor teeth being set somewhat obliquely. The palate is parabolic, but in some crania its shape approaches the ellipse. In the true Hottentots the mandible is comparatively slight, with a high symphysial border, short condylar and coronoid processes, a rather shallow sigmoid fossa, a narrow, pointed chin, and frequently an everted angle, in all of which characteristics they are intermediate between the Bushmen and the Negroes of the great lakes. The mandible of the Koranna, on the other hand, is strong and massive, with long coronoid processes, deeper sigmoid fossæ, higher alveolar processes, much better marked muscular impressions, and a broad, square, powerful chin, in all of which features it closely resembles the mandibles of Kaffir and Zulu skulls.

The molar teeth are large and well formed, considerably worn down in skulls beyond middle age, but in all cases well implanted and perfectly healthy; the incisors, which are small, round, thick, and truncated, show in many cases signs of having been filed down.

All the features of the skull are in accordance with the description given by Dr. Williamson of some preserved Hottentot heads now in the museum of the Army Medical School at Netley, but formerly at Fort Pitt, Chatham:—

"The head is broad and square, the face broad and flat: the forehead is straight and well arched; the ears are placed far back on the head, the distance from them to the prominent cheek-bones being very great: the malars stand forwards and outwards, and with the long, narrow, pointed chin nearly form a triangle: the breadth between the eyes is great, and there is scarcely any perceptible bridge to the nose; the nostrils are small and depressed, the greatest diameter being in the transverse direction."

The cranial sutures as a rule are simple, but sometimes pass without any intermediate stages to a condition of foliation. Only one skull is metopic.

Wormian bones are not uncommon, but an os epactale is exceedingly rare.

The following are the details of the examination, the Hottentot crania being compared in all cases with those of Kaffirs, Negroes of the lake districts principally consisting of a series sent to the British Museum from Nyassaland by Sir H. H. Johnston, which

I hope to describe fully at some future date), and with a collection from various districts of North-west Africa, extending from the Gambia to the Gold Coast, composed chiefly of Ashantis and Dahomans.

Some comparisons with Chinese crania are inserted on account of Barrow's ingenious, though futile, hypothesis of the Asiatic origin of the Cape Hottentots.

The *cephalic index* has a range from 66 to 79, with a mean of 72·7 for males and 75·9 for females, as compared with Kaffir, 72·3; Anyanja, 73; West Coast Negro, 73·2; *Chinese*, 78·8.

The distribution in the various divisions is—

	Hottentots.	Kaffirs.	Central Lakes District Negroes.	West Coast Negroes.
Dolichocephalic.. ..	62·1	77·8	78·2	62·8
Sub-dolichocephalic ..	34·5	16·7	14·5	22·3
Mesaticephalic	3·4	5·6	5·5	9
Sub-brachycephalic ..	—	—	1·8	5
Brachycephalic	—	—	—	·8

thus indicating the intense dolichocephalism of all the black races of Africa.

The length-height, or *altitudinal index*, is in the average male 71·2 and in the female 71·5, as contrasted with Koranna, 70·1; Kaffir, 71·3; Anyanja, 72·9; *Chinese*, 75·2; and with the following distribution:—

	Hottentots.	Kaffirs.	Central Lakes District Negroes.	West Coast Negroes.
Chamæcephalic	35·1	13·9	25	12·1
Orthocephalic	56·8	55·6	53·8	30·5
Hypsicephalic	8·1	30·6	21·2	48·4

The *breadth-height index* is of greater interest as a guide to ethnic relationship. Mean for males, 97·4: females, 95·8. *Cf.* Koranna, 94·7: Kaffir, 98·7; Anyanja, 101·7; *Chinese*, 103; Sicilian Pigmy, 107·4.

Classifying this index according to Broca's divisions, we find—

	Hottentots.	Kaffirs.	Central Lakes Negroes.	West Coast Negroes.
Tapeinocephalic	21·9	—	—	7·1
Metriocephalic	31·2	37·5	23 4	23·8
Akroeephalic	46·9	62 5	76 6	69

The forehead is full, but the glabella only slight, the proportion of the sub-cerebral to the total frontal curve being 16·9 in the true Hottentot as against 19·1 in the Koranna.

The distribution of the sagittal curve amongst its various components obtaining in African races is indicated in the following table:—

	Frontal.	Parietal.	Occipital.
True Hottentot	37	33·1	29·9
Koranna	34·3	35·5	30·1
Bushman	35	35·6	29·3
Kaffir	35·2	33·2	31·6
Central Lakes Negro..	35	35·1	29 6
West Coast Negro	33 9	35·1	31

Applying similar comparisons to other curves, we find—

	Relation of supra-auricular to total transverse curve.	Relation of pre-auricular to total horizontal curve.
True Hottentot	69	47·7
Koranna	67·2	45 6
Bushman	69·7	44·2
Kaffir	68·4	47·5
Central Lakes Negro	69 1	47·7
West Coast Negro	67·7	44·9

The mean *upper facial indices* are as follows:—

	Upper Facial (Broca).	Upper Facial (Kollmann).
True Hottentot	69·4	52 1
Koranna	70 2	50·2
Kaffir	71·7	53·3
Anyanja	70·8	52
West Coast Negro	71·5	48·9
Sicilian Pigmy	—	43

The distribution of the crania is—

	Hottentots.	Kaffirs.	Central Lakes Negroes.	West Coast Negroes.
Chamæprosope	36·8	38·5	20	46·7
Leptoprosope	63·2	61·5	80	53·3

It is found that male Hottentots are distinctly more leptoprosopic than the females.

The *orbital index* shows a range from 72 to 100, with maxima on the seriation curve at 79 and 86 and a mean of 86·7 for males and 88·1 for females. *Cf.* Kaffir, 83·6; Anyanja, 88·3; West Coast Negro, 84·7; *Chinese*, 89·9.

The mean *nasal index* in the case of the males is 56 and in that of the females 59, with a range of sixteen units 49–67. *Cf.* Kaffir, 55·1; Anyanja, 57·3; West Coast Negro, 61·4: *Chinese*, 49·8, showing the intense platyrhiny of the Hottentots, who in this respect are inferior only to the Bushmen.

As before, the general characteristics and harmony of the face are indicated in the subjacent combined table:—

	Hottentots.			Kaffirs.			Central Lakes District Negroes.			West Coast Negroes.		
	Facial.	Orbital.	Nasal.	Facial.	Orbital.	Nasal.	Facial.	Orbital.	Nasal.	Facial.	Orbital.	Nasal.
Microseme ...	22·2	34·3	—	9·1	23·1	—	9·3	15·7	—	16·7	26·3	1·8
Mesoseme ...	27·8	31·4	25	18·2	50	20·8	—	39·2	24·1	8·3	40·4	23·2
Megaseme ...	50	34·3	75	72·7	26·9	79·2	90·6	45·2	75·9	75	33·3	75

The *alveolar index* shows a range from 88 to 110, with a maximum in the seriation curve at 102, the mean index for males being 101·9 and for females 100·3. *Cf.* Korannas, 102; Kaffirs, 99·8: Anyanjas, 100·9; West Coast Negroes, 99·9; *Chinese*, 99.

The distribution observed on classification is—

	Hottentots.	Kaffirs.	Central Lakes District Negroes.	West Coast Negroes.
Prognathic	33·3	37·5	41·3	50
Mesognathic	50	29·2	47·8	38
Orthognathic	16·7	33·3	10·9	12

The parabolic palate has a mean *staphylinic index* of 71·2 for both sexes, a mean *uranic index*, male 111·5 and female 109·9, and a *dental index* of 41·5 in the male and 43·5 in the female skulls.

	Staphylinic.	Uranic.	Dental.
Cf. Koranna	79·6	118·9	41·6
Kaffir	68·5	110·7	42·5
Anyanja	68·6	111	42·3
West Coast Negro	69·7	109·7	43·9

The great flattening of the nasal region of the face is clearly indicated in the table showing the naso-malar indices of the various races:—

True Hottentot	107·1
Koranna	105·1
Kaffir	106
Anyanja	107·2
West Coast Negro	106·4

all thus falling into the platyopic subdivision.

Summing up the results of the foregoing classifications, the true Hottentot skull may be briefly described as dolichocephalic, akrocephalic, leptoprosopic, mesoseme, platyrhine, and leptostaphylinic.

III.—*General Conclusions.*

A survey of the foregoing measurements and of the tables of seriations shows that the Bushmen proper are in most of their features clearly separated off from the surrounding black races. The Hottentots, on the other hand, are seen to be intermediate in their characters.

The *cephalic* and *altitudinal* indices present monomorphic curves with no special features of interest, the summit of both curves being at about the same position in all the African races.

The curve of the *breadth-height* indices is dimorphic, the first focus of regression being at a low index both in Hottentots and Bushmen, a position in which the curves for other African races show no elevation.

The second focus corresponds to the commencement of the rise in the curve among the Kaffir and Negro tribes, and may perhaps be taken as an indication of some racial intermixture. This seems clear in the Hottentots, whose second focus more

nearly corresponds to the summit of the curve in the case of Negroes from the "Central Lakes"; in the Hottentots the curve continues with a gradual descent for some little distance. However, the abrupt cessation of this curve in the case of the Bushmen throws considerable doubt on this interpretation, and would indicate that such racial intermixture, if it occurred at all, must have been at an early period. Although male and female indices are tabulated together in this seriation, the dimorphism of the curve is due to racial, and not sexual, influences.

This index almost completely destroys the comparison drawn by Williamson between the Bushman and Ashanti crania, the former inclining towards tapeinocephalism, while the latter are very akrocephalic.

The seriation of the *alveolar* indices is of greater interest. The curve constructed from Bush crania is dimorphic, with maxima at 97 and 102, while that for Hottentots is monomorphic, with a maximum at 102. The first focus of regression in the curve for Bushmen is at a lower index than appears among other African races, and agrees with the usual description of such skulls as orthognathous; the second focus corresponds with the maximum of the curve among the Negroes from the shores of Lake Nyassa, but it is less than the maximum for Negroes from the north-west coast. This curve indicates resemblances between the Bushmen and other pigmy races, the first maximum corresponding to the mean alveolar index of the European pigmies, while the second approaches that of the Negrillos of the Central African forests. The greater prognathism of the Hottentots separates them from the Kaffir tribes in contact with them to the south-east, and constitutes a point of resemblance with the Negroes of the lake districts.

That such a relationship should exist is very probable, as the loose stone heaps which mark the track of the Hottentots are to be found far to the north of the Zambesi river, and Andersson describes wandering tribes of Bushmen in the extreme north of Damaraland, where they must for a long time have been close neighbours of the central group of Bantu-speaking peoples. Some of the skulls from tribes inhabiting the western shores of Lake Nyassa are almost indistinguishable from those of Hottentots from Cape Colony. There are a number of races inhabiting a strip of country extending from the great lakes to the Zambesi distinguished by prognathous and hypsistenodolichocephalic skulls. These races are separated from the sea on the one side by the Makua, Mozambique, and Kaffir tribes, who are tapeinocephalic and less prognathous, although pre-

senting the same degree of dolichocephalism, and on the other by Ova Herrero and Bangala tribes, of whose craniological features, which appear to resemble those of the Kaffirs of Natal, we know but little.

The seriation of the *orbital* index separates off the Bush as the only markedly microseme African race, and shows that it is most nearly approached in this respect by the Negroes of the Slave Coast.

The dimorphism of this curve is due to sexual influences, the female skulls being more megaseme than the male.

The curve of the *nasal* index is monomorphic, the maximum being at 62 in the Bushmen, while in the Hottentots there is a tendency to group round 53, an index which corresponds with the maximum for tribes from the lake districts. The Bush races are thus seen to be the most platyrhine in Africa, but to be approached in this respect, as Williamson has pointed out, by the Ashantis

The Bushmen of South Africa therefore appear to be characterised by certain specific features, and not to very closely resemble any other race.

The first theory as to their origin was that propounded by Barrow in his "Travels in Southern Africa," published in 1801. He considers that the Bush races might have arisen as the offspring of Chinese sailors wrecked on the Mozambique coast. To support this hypothesis he notices certain resemblances between the Bushmen and Mongolians, and observes that the upper lid of the eye of a real Hottentot, as in that of the Chinese, was rounded off into the lower on the side next the nose. In his "Travels in China" Barrow goes on to remark: "Further observations have confirmed me in the striking degree of resemblance between them. Their physical features agree in almost every point: the form of their persons, the smallness of their joints and extremities, their colour and features, their voices, and particularly their singularly shaped eye." Barrow, it should be observed, does not distinguish between Hottentots and Bushmen, describing these nomad peoples as "true aborigines of South Africa, unmixed with any other tribe."

This view as to the Chinese origin of the Bushmen received support from Knox in 1824, and in later years from Lamprey, who, after pointing out some slight resemblances between Chinese and Hottentot skulls in his possession, continued his comparison on ethnological grounds.

This hypothesis was without difficulty refuted by Desmoulins, as in their general features these races present no resemblances.

It is, however, worthy of note that Williamson in his description of the Bush crania at Chatham, while disclaiming

all views as to their Chinese affinities, compares them with Malays.

A more useful comparison is with the Negrillos of the equatorial forest zone in Africa and with the pigmy races recently described in Europe.

Sir William Flower in his memoir on the Akkas shows many points of resemblance between them and the Bushmen, and notes that their skulls conform more to the type of the African Negro than to that of any other race.

Prognathism, platyrhiny, elongated, narrow palate, and large teeth, all characteristic of the Negro, are exaggerated in the Akka. The last three characters are also found in the skulls of Bushmen, while the extremes of prognathism recorded for the latter exceed those found in the Akkas, although their mean alveolar index is considerably the smaller. A special feature of the Akka skull is the microseme orbit, which is also characteristic of Bushmen.

The oblong oval skull, the vertical forehead, and well-marked supra-mastoid grooves are equally noticeable in both races.

Descriptions of the appearance of the Negrillos vary somewhat, but Hermann von Wissmann in the narrative of his second journey through Equatorial Africa describes the Batwa of the forest zone south of the Congo, who are probably of the same race as the Akka, as reminding him strongly of portraits of the Bushmen of Cape Colony. Du Chaillu describes a pigmy race, the Obongo, in Ashiraland, as of a light brown colour, and somewhat resembling the Bushmen.

On the whole it seems probable that the Negrillos and the Bushmen are allied, the former either having taken refuge in the almost impenetrable forest when the onrush of the conquering Bantu Kaffirs swept the Bushmen to the south, or else having penetrated therein before this invasion, and so being unaffected by it. The principal objection to such a view is that the phenomenon of steatopygia has as yet not been described among the Negrillo races. Dr. Junker indeed definitely states that among the Wochua this feature is never found.

The comparison of the Bushmen and the European pigmies is rendered the more interesting on account of the statuette from the neolithic station at Brassempouy which represents the race of that time as steatopygous.

In Europe remains of a pigmy race have been found in neolithic strata at Schaafhausen, and in Sicily and Sardinia a small race still surviving was discovered by Professors Kollmann and Sergi. Professor Sergi considers that the pigmy races came to Europe in neolithic times, but that they present no Negrito affinities.

On examining together the skulls of Bushmen and of a European pigmy, a few interesting points of comparison may, however, be noticed. The European skulls are rather smaller. The cranial capacity of a skull from Schaafhausen described by Professor Kollmann is 1207 c.c., while that of a Sicilian pigmy in the Vesalianum at Basle is 1030 c.c., the average capacity of Bush crania being 1330 c.c. If a well-filled Bushman skull be selected for comparison the cranial outline as seen in *norma verticalis* is similar in the two cases. The zygomatic arches are, however, relatively wider in the European pigmy skull, which is phænozygous, while in the Bush crania the cryptozygous condition usually obtains.

Viewed in *norma lateralis*, well-marked double lineæ temporales, a small mastoid, strong zygomatic arch, and post-zygomatic ridge with a slight supra-mastoid groove, are to be noticed in the skull of the Sicilian pigmy, as in that of the Bushman. These features, it may be remarked, are not found among the Andamanese or the Negritos of Malaysia. In the pigmy the forehead is full and vertical, the nasal bones are inconspicuous in profile, and the face is superiorly orthognathous, all of these features being also characteristic of the Bush races of South Africa.

In *norma facialis* there are also several points of resemblance, such as the wide interorbital space, the prominent, forwardly projecting malars, the deep infra-orbital fossæ, the marked platyrhiny, and chamæprosope nature of the face.

The nose in the Sicilian pigmy is the most platyrhine in Europe, but differs from that of the Bushmen and the negroid races generally in the greater prominence of the bridge and the sharper chiselling of the lower border and floor, although the general shape of the apertura pyriformis is not very dissimilar in the two cases.

The cephalic, facial, orbital, and nasal indices of the two races agree very well; but the European pigmy is sharply distinguished from his African brother by the possession of a very akrocephalic skull, a feature never found among the Bushmen.

For the present I can only say that the data seem to me too insufficient to enable the affinities of the various pigmy races to be clearly demonstrated or to allow of much significance being attached to any apparent resemblances.

TABLE OF SERIATIONS.

LENGTH-BREADTH INDEX.

	Bushmen.	Hottentots.	Kaffirs.	Central Lake District Negroes.	North-west Coast Negroes.
64	—	—	—	—	2
65	—	—	—	—	1
66	—	1	1	—	—
67	2	—	—	2	1
68	1	1	3	2	3
69	2	1	3	5	8
70	1	2	3	8	9
71	1	2	4	11	10
72	2	4	4	5	8
73	6	5	2	4	16
74	8	1	8	6	11
75	10	3	2	4	14
76	11	7	4	1	10
77	6	2	—	3	7
78	9	—	2	1	9
79	2	1	—	2	4
80	2	—	—	1	3
81	1	—	—	—	1
82	—	—	—	—	1
83	—	—	—	—	1
84	—	—	—	—	—
85	—	—	—	—	—
86	—	—	—	—	1

TABLE OF SERIATIONS.

LENGTH-HEIGHT INDEX.

	Bushmen.	Hottentots.	Kaffirs.	Negroes of Central Lake District.	Negroes of North-west Coast.
65	2	1	—	—	1
66	—	—	1	—	—
67	4	2	1	1	2
68	2	—	—	5	5
69	5	4	1	4	4
70	13	13	4	6	6
71	7	3	2	5	4
72	7	6	6	1	7
73	7	4	5	10	12
74	5	1	2	7	17
75	2	1	7	4	12
76	3	2	2	3	14
77	—	—	—	2	9
78	2	—	2	1	11
79	—	—	—	2	11
80	—	—	3	—	6
81	—	—	—	1	3

TABLE OF SERIATIONS.

BREADTH-HEIGHT INDEX.

	Bushmen.	Hottentots	Kaffirs.	Negroes of Central Lake District.	Negroes of North-west Coast.
86	—	—	—	—	1
87	—	1	—	—	—
88	1	—	—	—	—
89	1	2	—	—	—
90	2	3	—	—	1
91	5	—	—	—	—
92	7	3	—	2	2
93	1	2	—	2	1
94	2	1	1	1	1
95	3	—	—	—	1
96	7	4	3	3	2
97	1	1	1	1	2
98	3	1	6	4	2
99	1	2	—	4	4
100	1	4	1	6	6
101	2	2	3	3	2
102	—	—	1	5	3
103	—	1	1	4	5
104	—	1	3	2	1
105	—	1	1	2	2
106	—	2	2	4	2
107	—	1	—	2	1
108	—	—	—	1	3
109	—	—	—	—	—
110	—	—	1	—	—
113	—	—	—	—	1
116	—	—	—	1	—

TABLE OF SERIATIONS.

ALVEOLAR INDEX.

	Bushmen.	Hottentots.	Kaffirs.	Negroes of Central Lake District.	Negroes of North-west Coast.
88	—	1	—	—	—
89	—	—	—	—	—
90	—	—	—	—	—
91	1	—	—	—	—
92	—	1	—	—	—
93	2	—	1	—	1
94	1	—	—	2	—
95	2	—	2	1	1
96	2	1	—	—	1
97	6	—	2	1	1
98	3	2	5	4	2
99	2	3	1	5	3
100	3	1	2	1	4
101	1	3	1	5	5
102	9	4	1	6	2
103	1	1	1	7	5
104	2	1	3	3	9
105	—	2	1	5	5
106	1	2	4	3	4
107	1	2	1	2	3
108	—	—	—	2	2
109	—	—	—	—	1
110	—	1	—	—	—
111	—	—	—	—	—
112	—	—	—	—	1

TABLE OF SERIATIONS.

ORBITAL INDEX.

	Bushmen.	Hottentots.	Kaffirs.	Negroes of Central Lake District.	Negroes of North-west Coast.
66	3	—	—	—	—
72	—	1	—	—	—
74	1	—	—	—	1
75	2	1	1	—	1
76	6	3	—	1	1
77	—	—	—	1	—
78	1	—	—	—	—
79	2	5	1	2	1
80	1	—	—	—	3
81	3	2	—	1	2
82	5	1	3	2	5
83	2	1	1	1	1
84	5	1	1	4	4
85	5	2	3	3	5
86	7	4	3	2	4
87	2	1	5	6	8
88	1	—	—	1	1
89	4	3	3	7	2
90	1	1	—	3	3
91	2	—	—	—	1
92	2	3	3	4	8
93	—	—	—	—	—
94	4	—	1	8	1
95	1	—	1	—	1
96	—	—	—	—	1
97	—	5	—	3	1
98	—	—	—	—	1
99	—	—	—	—	—
100	1	1	—	1	1
108	—	1	—	—	—

TABLE OF SERIATIONS.

NASAL INDEX.

	Bushmen.	Hottentots.	Kaffirs.	Negroes of Central Lake District.	Negroes of North-west Coast.
47	—	—	—	—	1
48	1	—	—	—	2
49	1	1	1	1	2
50	1	—	2	1	1
51	1	3	1	2	4
52	2	—	—	4	3
53	3	3	1	5	1
54	3	2	4	4	6
55	1	—	—	6	5
56	2	3	4	4	4
57	—	—	1	6	7
58	2	2	—	1	—
59	2	—	1	4	2
60	5	2	4	1	5
61	2	2	—	4	—
62	6	2	2	4	7
63	1	1	—	—	1
64	—	—	—	1	1
65	—	1	—	2	1
66	3	1	1	—	—
67	1	1	1	—	1
68	—	—	—	—	—
69	1	—	1	—	1
70	1	—	—	3	—
71	—	—	—	—	—
72	—	—	—	1	1
73	—	—	—	—	—
74	1	—	—	—	—

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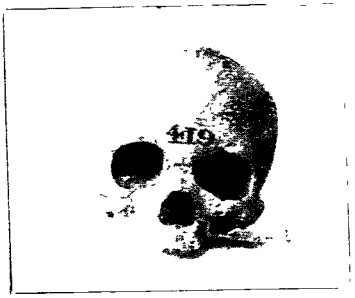
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Description of Plate XVI.

Fig. 1.—*Norma facialis* of adult male Bushman.
„ 2.—*Norma lateralis* of the same.
„ 3.—*Norma facialis* of adult male "True" Hottentot.
„ 4.—*Norma lateralis* of the same without lower jaw.

The photographs are of skulls in the Army Medical Museum at Netley Hospital.

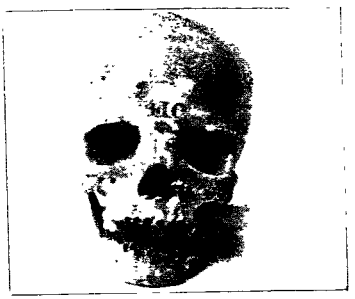
P.S.—Since the above was written I have been enabled by the kind permission of the authorities to examine the collection of Bush and Hottentot crania in the Army Medical Museum at Netley. These skulls differ in no important respects from those previously described. A table of their measurements and indices is appended, but they have not been included in the averages and seriations.



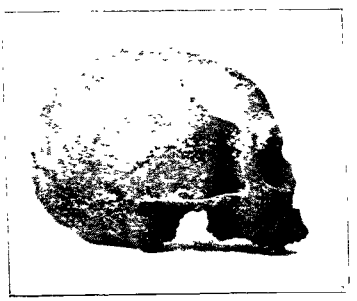
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2



3.



4.

TABLE OF MEASUREMENTS AND INDICES OF CRANIA IN THE ARMY MEDICAL MUSEUM AT NETLEY HOSPITAL.

	HOTTENTOTS.								BUSHMEN.							
Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Catalogue number	App. 48	App. 49	408	409	410	411	412	413	418	419	[illegible]	421	422	424	426	427
Sex	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♀	♀	♀	♀	♀	♀
Maximum glabello-occipital length	182	188	185	178	176	183	182	174	178	173	[illegible]	172	184	174	180	174
Maximum breadth	136	130	139	135	134	127	135	131	134	135	[illegible]	128	130	139	135	126
Basi-bregmatic height	117	135	134	131	128	134	132	130	128	121	[illegible]	131	130	133	123	122
Minimum frontal breadth	95	96	88	106	97	88	102	95	95	94	[illegible]	91	96	92	98	95
Maximum frontal breadth	112	111	115	123	110	106	112	117	114	114	[illegible]	—	116	114	110	106
Bi-stephanic breadth	112	101	97	110	110	96	112	111	106	112	[illegible]	—	114	112	108	106
Pterion breadth	107	110	101	113	100	101	100	107	103	103	[illegible]	102	104	98	105	102
Asterion breadth	102	109	103	109	110	102	—	110	117	103	[illegible]	100	99	104	—	95
Basi-nasal length	97	105	100	97	99	101	97	92	96	87	[illegible]	98	93	90	97	89
Basi-alveolar length	98	105	100	96	99	102	99	91	98	91	[illegible]	95	91	88	—	—
Foramen magnum length	31·5	40	34	36	37	37	35	33	37	36	[illegible]	34	37	39	—	33
Foramen magnum breadth	25	30	28	32	28	27	26	26	31	28	[illegible]	33	26	30	—	25
External bi-orbital breadth	105	110	100	116	107	101	110	103	103	101	[illegible]	103	97	—	—	—
Internal bi-orbital breadth	99	—	94	104	100	97	104	97	95	97	[illegible]	95	88	—	—	—
Bi-jugal breadth	118	—	110	117	109	112	118·5	113	112	111	[illegible]	106·5	101	—	—	—
Bi-maxillary breadth	—	—	90	105	91	91	97	94	89	—	[illegible]	87	84	86	—	—
Bi-zygomatic breadth	126	—	123	130	118	117	131	123	122	—	[illegible]	118	—	111	—	—
Post-malar breadth	—	—	120	128	113	116	130	120	121	—	[illegible]	116	—	108	—	—
Ophryo-alveolar height	92	100	92	85	78	93	91	84	83	81	[illegible]	79	77	74	69	—
Naso-alveolar height	72	72	70	64	57	71	65	65	57	58	[illegible]	61	59	59	55	—
Spino-alveolar height	27	23	—	20	17	26	20	23	18	20	[illegible]	21	22	19	19	—
Ophryo-mental height	—	—	141	—	117	—	—	—	—	—	[illegible]	—	—	—	—	—
Naso-mental height	—	—	118	—	98	—	—	—	—	—	[illegible]	—	—	—	—	—
Orbital breadth	37	40	37	38	38	38	38	35	36	39	[illegible]	37	38	34	36	—
Orbital height	34	36	30	30	27	36	33	33	27	31	[illegible]	31	32	33	33	—
Bi-dacryc breadth	21	20	18	27	23	22·5	27	26	19	20	[illegible]	20	22	18	21	23
Nasal height	45	52	—	45	48	45	45	43	41	41	[illegible]	44	38	42	37	41
Nasal breadth	23	27	—	31	24	28	27	27	28	25	[illegible]	24	25	23	25	24
External palatine length	57	58	53	55	51	57	52	51	54	52	[illegible]	52	48	47	44	—
Internal palatine length	53	50	49	51	48	50	47	45	49	48	[illegible]	48	45	41	40	—
External palatine breadth	60	64	64	64	59	59	62	62	63	—	[illegible]	58	56	61	54	—
Internal palatine breadth	35	37	42	41	37	34	38	42	36	40	[illegible]	36	32	32	31	—
Anterior palatine breadth	41	43	45	43	40	40	—	41	39	—	[illegible]	36	37	43	40	—
Dental length	42	—	40	—	41	43	—	—	40	—	[illegible]	44	—	—	—	—
Naso-malar curve	109	—	99	112	110	104	112	103	101	101	[illegible]	100	99	95	—	—
Sub-cerebral curve	22	29	23	21	21	22	28	19	27	22	[illegible]	29	17	15	15	27
Total frontal curve	128	127	119	122	127	124	131	126	130	129	[illegible]	120	120	134	126	131
Parietal curve	119	124	135	130	126	125	128	122	118	112	[illegible]	111	121	123	127	115
Supra-occipital curve	60	72	69	59	61	60	65	68	61	74	[illegible]	69	58	71	69	71
Total occipital curve	109	118	118	108	100	110	113	111	114	120	[illegible]	114	114	113	111	110
Total sagittal curve	356	369	372	360	353	359	372	359	362	361	[illegible]	345	355	370	364	356
Supra-auricular curve	292	302	298	295	289	288	—	295	292	290	[illegible]	270	—	302	314	—
Total transverse curve	430	449	433	424	415	415	—	435	425	410	[illegible]	403	—	427	412	—
Pre-auricular curve	245	244	235	222	232	210	—	235	238	232	[illegible]	228	—	249	249	—
Total horizontal curve	504	508	513	497	494	498	—	499	505	500	[illegible]	491	—	506	485	—
INDICES.																
Length-breadth	74·7	69·1	75·1	75·8	76·1	69·4	74·2	75·3	73·5	78	[illegible]	78	79·1	79·7	79·9	75·6	72·4
Length-height	64·3	71·8	72·4	73·6	72·7	73·2	72·5	71·7	71·9	69·9	[illegible]	68·2	75·6	79·7	76·4	68·3	70·1
Breadth-height	86	96·2	96·4	97	95·5	105·5	97·8	99·2	95·5	86·4	[illegible]	87·4	95·6	100	95·7	90·4	96·8
Upper facial (Kollmann)	57·1	—	56·9	49·2	48·3	60·7	49·6	52·8	46·7	—	[illegible]	51·7	—	53·2	—	—	—
Upper facial (Broca)	73	—	74·8	65·4	66·1	79·5	69·5	68·3	68	—	[illegible]	66·9	—	66·7	—	—	—
Total facial (Kollmann)	—	—	95·9	—	83·1	—	—	—	—	—	[illegible]	—	—	—	—	—	—
Total facial (Broca)	—	—	114·6	—	99·2	—	—	—	—	—	[illegible]	—	—	—	—	—	—
Maxillary facial	—	—	77·8	61	62·6	78·7	67	69·1	64	—	[illegible]	70·1	70·2	68·6	—	—	—
Orbital	91·9	90	81·1	78·9	71·1	94·7	86·8	94·3	75	74·5	[illegible]	83·8	84·2	97·1	91·7	—	—
Nasal	51·1	51·9	—	68·9	60	62·2	60	62·8	68·3	64	[illegible]	60	65·8	54·8	67·6	58·5	—
Palatal (staphylinic)	66	74	85·7	80·1	77·1	68	80·9	93·3	73·5	83·3	[illegible]	73·9	71·1	78	77·5	—	—
Palatal (uranic)	105·3	110·3	120·8	116·4	115·7	103·5	119·2	121·6	116·7	—	[illegible]	107·7	116·7	120·8	122·7	—	—
Alveolar	101	100	100	99	100	101	102·1	98·9	102·1	103·4	[illegible]	103·3	96·9	97·8	97·8	—	—
Dental	43·3	—	40	—	41·4	42·6	—	—	41·7	—	[illegible]	48	—	—	—	—	—
Naso-malar	110·1	—	105·3	107·7	110	107·2	107·7	106·1	106·3	105	[illegible]	104·2	104·2	108	—	—	—
Fronto-zygomatic	88·9	—	93·5	94·6	93·2	90·6	85·5	95·1	93·4	—	[illegible]	99·2	—	104·5	—	—	—
Stephanio-zygomatic	88·9	—	78·8	84·6	93·2	82·1	85·5	90·2	86·9	—	[illegible]	84·7	—	102·7	—	—	—
Relations of Diameters: Minimum frontal breadth–maximum breadth	69·9	73·8	63·3	78·5	72·4	69·3	75·6	72·5	70·9	[illegible]	[illegible]	67·4	66·9	73·8	66·2	72·1	75·4
Relations of Diameters: Bi-stephanic breadth–maximum breadth	82·4	77·7	69·8	81·5	82·1	75·6	83	84·7	79·1	83	[illegible]	74·1	—	87·7	80·6	79·4	84·1
Relations of Diameters: Pterion breadth–maximum breadth	78·7	84·6	72·7	83·7	71·6	79·5	74·1	81·7	76·9	75	[illegible]	71·9	75	80	66·9	77·2	81
Relations of Diameters: Asterion breadth–maximum breadth	75	83·8	74·1	80·7	82·1	80·3	—	84	87·3	75	[illegible]	79·3	80·1	76·2	74·8	—	75·4
Relations of Curves: Sub-cerebral–total frontal	17·2	22·8	19·3	17·2	16·5	17·7	21·4	15·1	20·8	17·2	[illegible]	16·7	14·2	11·2	11·9	20·6	—
Relations of Curves: Frontal–total sagittal	36	34·4	32	33·9	36	34·5	35·2	35·1	35·9	35·7	[illegible]	34·8	33·8	36·2	34·6	36·8	—
Relations of Curves: Parietal–total sagittal	33·4	33·6	36·3	36·2	35·7	34·8	34·4	34	32·9	34	[illegible]	32·2	34·1	33·2	34·9	32·3	—
Relations of Curves: Occipital–total sagittal	30·6	32	31·7	30	28·3	30·6	30·4	30·9	31·5	[illegible]	[illegible]	33	32·1	30·5	30·5	31·9	—
Relations of Curves: Pre-auricular–total horizontal	48·6	48	45·8	44·7	47	42·2	—	47·1	47·1	44	[illegible]	46·4	—	49·2	43·3	—	—
Relations of Curves: Supra-auricular–total transverse	67·9	67·3	68·8	69·6	69·6	69·1	—	67·8	68·7	70·7	[illegible]	67	—	70·7	73·8	—	—

MEASUREMENTS OF MANDIBLE IN MILLIMETRES.

	BUSHMEN.													
Museum	Cambridge.					Royal College of Surgeons.								
Catalogue Number ..	1751	1738	1743	24 / 7	23 / —	1301	1300	1302	1303	1303B	1303E	1304	1625	1623
Bi-condyloid breadth	124	119	102	112	111	107	107·5	104	119	102	100	107		108
Bi-gonial breadth	111	92	89	74	82	90	84	84	96	85	94	81	86	92
Bi-mental breadth	42	21	24	34	24	27	26	23	29	37	22	34	26	—
Symphysial height	38	30·5	28	29	35	29·5	28?	28	—	27	33	29	34	—
Malar height	29	27	24	24	22	20	27?	22	26	24	22	24	—	26
Height of ascending ramus ..	47	50	33	37	43	37	38	36	40	35	36	29·5	34	40
Breadth of ascending ramus ..	35	33	34	30	36	32	33	35	39·5	29	33	34	30	30
Bi gonio-symphysial curve ..	211	191?	180	190	192	175	171	162	188	178	174	173	150	191
Gonio-symphysial chord ..	90	88	77	—	—	81	73	74	88	84	81	81	72	89
Condylo-coronoid chord ..	42	33	29	—	—	37	36	32	44	33	34	36	37	41
Bi-zygomatic breadth	—	127	120	116	120	112	120	111	133	116	117	118	117	123
Gonio-zygomatic index ..	—	72·4	74·2	63·8	68·3	80·4	70	75·7	72·2	73·3	80·3	68·6	73·5	74·8

MEASUREMENTS OF MANDIBLE IN MILLIMETRES.

	HOTTENTOTS.						
Museum	Cambridge.		British Museum.	Royal College of Surgeons.			
Catalogue Number	1739	1747	84, 4, 9, 1	1296	1298A	1618	1619
Bi-condyloid breadth	110	110	110·5	120	100	93	105
Bi-gonial breadth	88	102	71·5	108	84	83	90
Bi-mental breadth	20	47	—	43	23	—	32
Symphysial height	36	32·5	32	37	31	31	27
Molar height	26·5	26	23	33	23	25	22·5
Height of ascending ramus	36·5	50	36	48	36	12	37
Breadth of ascending ramus	35	34	33	46	32	30	38
Bi-gonio-symphysial curve	196	198	184	195	173	155	188
Gonio-symphysial chord	97	93	84	101·5	83	75	88
Condylo-coronoid chord	36·5	34	34	40	32	33	40
Bi-zygomatic breadth	124·5	131	118·5	137	117	109	—
Gonio-zygomatic index	70·7	77·9	60·5	78·8	71·8	76·1	—

The CARIB LANGUAGE *as now spoken in* DOMINICA, WEST INDIES. By JOSEPH NUMA RAT, St. Kitts, West Indies, February, 1897.

ORTHOGRAPHY.

FIVE of the vowel sounds used in these illustrations of the Carib language are those of the Italian, viz., *a, e, i, o, u.* A sixth is that of a short *ŭ* and corresponds to the vowel as it is pronounced in the French word *vu*; *e.g.*, *sŭsŭ* = a bird. A seventh is the short *ĭ* pronounced as in the English *sin* and found in such words as *iátina* = I am, in which the second *i* is so lightly sounded that the third syllable may be omitted in conversation and the verb become *iatna.*

Whenever two or more vowels are in contact each is pronounced separately.

The consonants have more or less the same sounds as in English. They are the same in number as in that language with the exception of the soft *c, j, v,* and *z*, which are not employed in Carib, and *d*, which is probably replaced by *t.*

The compound consonants are *nh* and *ch.* The former occurs in *nha,* which is the third person plural of the personal pronoun. The *n* is pronounced, as far as it can be, before the *h* which is aspirated. The latter, when at the beginning of a word, is sounded as in the English *church*; and, when final, as in the Scotch *loch.*

The letter *h* is always aspirated.

The accent in the Carib words will be indicated by placing the French acute accent over the vowel on which it falls; *e.g.*, in *mútu*, the accent should be placed on the penultimate, and, in *háruti*, on the antepenultimate syllable.

As a rule to which I remember no exception, the accent in words of two syllables is placed on the penultimate, and, in those of three or more syllables, on the antepenultimate syllable.

THE ARTICLE.

The indefinite.

The indefinite article is expressed, as it is in many other languages, by the word meaning one, viz., *ába*; *ába mútu* = a person; *ába yámati* = a basket. The word *ába* is sometimes omitted in phrases in which the indefinite article is expected in

English; thus, *aparánuba buírŭhŭ, napúraku wátu nukútahani* = if I kill a wild pig, I light a fire to roast it; *átŭka kréeti mútu ábu bíti* = when a person wants to build a house. *Buírŭhŭ* = wild pig; *wátu* = fire; *mútu* = person.

The definite.

There is no definite article in Carib. This is shown by the following sentences, *barunámuti ŭ́rma arábsen* = I took the road through the forest (*barunámuti* = I took, *ŭ́rma* = road, *arábsen* = through the forest); *sŭ́lŭtna túna akáiruku* = I reached the bank of the river (*sŭ́lŭtna* = I reached, *túna* = river, *akáiruku* = bank).

The place of the definite article is supplied by the third person of the personal pronoun and by the demonstrative pronoun, *e.g.*, *lúkusa síbui* = the gommier tree (*síbui* = gommier, *úkusa* = tree, *l*, short for *li*, = the third person singular of the personal pronoun); *lúkusa líha síbui* = the tree of the gommier (*líha* = a demonstrative pronoun); *ábu wŭ́kŭri* = a boy, *ábanu líhu wŭ́kŭri* = one of the boys; *harútium nhíleue* = the flowers are white (*harútium* = white, *íleue* = flowers, *nh*, short for *nha*, = the third person plural of the personal pronoun).

The Substantive.

The subject of a sentence may either precede or follow the verb; *nibáya su han awúita* = all my children are grown up (*nibáya* = my children, *su* = all); *yanhi nhapúkasa su nibaya* = all my children were born there.

There is no declension in the Carib language. The possessive noun generally precedes the others; thus, *túna akaíruku* = the bank of the river; *kíere ákusa* = pieces of manioc (*túna* = river, *kíere* = manioc). It may, however, follow: *e.g.*, *lábuye líha baranákiri* = the house of the white man (*lábuye* = the house, *líha* = the, *baranákiri* = white man); *lúbuye ábu mútu* = the house of a person. The relation between the nouns in such instances can only be gathered from their meaning.

Dependence on a verb when direct is expressed by placing the dependent noun immediately after the verb; when indirect, by inserting the personal pronoun of the third person between the verb and the noun. *Wa suáha wáiriti wéue* = we cut down the large trees (*wa* = we, *suáha* = cut down, *wáiriti* = large, *weue* trees). *Rubái núhi lúni áuli* = give the meat to the dog (*Rubái* = give, *núhi* = meat, *lúni* = to him (the), *áuli* = dog).

Instrumentality is indicated by the preposition *áo* = with; *láo akáiruku* = with creepers; *láo musíere* = with leaves; motion from, by *oárua* = from; *loárua láti* = from the house.

When placed before a noun, such prepositions as *áo, oária*, etc., have always prefixed to them the third person of the personal pronoun, viz., *l* or *t*. short for *li* or *ti*, according as the noun is masculine or feminine.

Number.

The plural has generally the same termination as the singular. This is doubtless due to the want of education as well as to the indolence of those by whom the Carib language is now spoken, the context being left to indicate the number of the noun.

When a Carib is sufficiently pressed to make a distinction between the two numbers, it is found that this is effected by adding *em* or *iem* to some, and *um* or *ium* to other nouns.

Gender.

The letters *l* and *t* prefixed to substantives indicate the masculine and feminine genders respectively. It should, however, be remembered that *l* and *t* are short for *li* and *ti*, the masculine and feminine of the third person of the personal pronoun which serve the purposes of the definite article and the possessive pronoun. In such expressions, therefore, as *lóuku lísibu* = over his face, and *tóuku tísibu* = over her face, the literal translation should be, over the face of him or over him, his face, and over the face of her or over her, her face.

Hence Carib substantives may be grouped in two classes, the *l* class and the *t* class; and, as the former include all male, and the latter, all female beings, the substantives of these two groups may be described as masculine and feminine respectively with as much propriety in Carib as in any other language.

A few substantives, like *áuli* = dog, being common to both sexes, may also be correctly described as being of a common gender. In such cases the sex is indicated by placing the word *wăkári* = male, or *wări* = female, before the substantive.

The majority of the substantives of the *l* or masculine class end in *i* or *e*; and the majority of those of the *t* or feminine class in *o* or *u*.

Adjectives.

Adjectives, when in direct contact with the substantives which they qualify, always precede the latter; *waíriti wéwe* = large trees (*wéwe* = trees); *lábe wegu* = many days (*wégu* = days).

When the modern Carib takes the trouble of expressing the plural of an adjective, he does so by adding to the singular the same termination as in the case of the substantive.

Degrees of comparison are indicated by means of such suffixes as *oária, luti, kasi, sikŭkua láo, lábu,* etc.

The first of these is used in conjunction with personal pronouns in the following way :—

	1st.	2nd.	3rd.
Singular ..	*Noária* .. .. (More than I.)	*Boária* .. .. (More than thou.)	*Loária.* (More than he.)
Plural	*Waoária* .. .. (More than we.)	*Hoária* .. .. (More than ye.)	*Nhoária.* (More than they.)

The subjoined sentences illustrate the use of the above suffixes :—

Wairútna boária lára = I am taller than he.
Líha wáriti noária = He is taller than I.
Mawairikútira kíluti = We are not as big as you.
Waíriti líha músu kasi líha áuli = The cat is as big as the dog.
Hanuhutétna héwe sikŭkua láo buírŭhŭ arasáni = I fear a tête de chien (name of a snake) more than a wild pig.
Líha bímeti lábu líkuya = This one is less sweet than that one (*ábu* = under or beneath).

The superlative, when used absolutely, is expressed either by repeating the adjective, *e.g., wíri wíri* = very black, *haru haru* = very white, or by lengthening the vowel of the first syllable, thus *wiiiiri, haaaaru.* When employed relatively, it is formed as in French, by placing *líha* = the, before the comparative.

PRONOUNS.

Personal.

There are two forms of the personal pronoun, viz., the absolute and the conjunctive.

The absolute.

	1st.	2nd.	3rd.
Singular	*Núkuya* .. or *Áo* ..	*Bákuya* .. or *Ámoro* ..	*Líkuya* (masc.) *Túkuya* (fem.)
Plural ..	*Wákuya* ..	*Hákuya* ..	*Nhákuya.*

Káta mútu yánhi = Who is there ?
Áo = It is I ; *Ámoro* = It is thou ; *Wákuya* = It is we.

Though generally reserved for the absolute form of the pronoun, the above may be used in conjunction with verbs in cases in which emphasis is required, *e.g.*,

Áo ba búma = I go with thee.
Ámoro ba núma = Thou goest with me.
Líkuya atŭkáyali = He did it.

Áo and *ámoro* are used by men, and *núkuya* and *búkuya* by women. The other persons are used by both sexes.

The Conjunctive.

	1st.	2nd.	3rd.
Singular ..	*Ni*	*Bu*..	*Li* (masc.) or *Ti* (fem.).
Plural	*Wa*	*Ha*..	*Nha*.

Biabri wéyu láusen ni síruni = It is four days since I left.
Nha benúhai lubuyékua = They buried him in his own house.

When the verb begins with a vowel, the terminal vowel of the pronoun is dropped; *átŭka* = to make; *natŭkaya* = I am making; *abúaha* = to cook; *tabuáhaya aíkini* = she cooks my food.

The relations of the personal pronouns to other words are indicated by such suffixes as *úni, úma, óroman, óaka, óaria*, etc., added to the pronominal consonants *n, b, l* or *t, h, nh*, and to *wa*, the first person plural:—

	1st.	2nd.	3rd.
Singular ..	*Núni*	*Búni*	*Lúni* or *Túni*.
Plural	*Wáuni*	*Húni*	*Nhúni*.

Róbai núni = Give it to me.
Ni síkuba líha búni lo béhera búruru núni = I give you this to buy plantains for me.
Chiséntina búni = I love you.
Káriti nári núni = I have toothache (literally, my tooth is painful to me).
Nibisikaétina boúria = I am ashamed of you.
Akwiméhati túma = He is making love to her.

The forms in *úni* are used when the pronouns are in the

dative case or when they are indirectly dependent on verbs. When they are directly governed by verbs or placed at the end of words, they are expressed as follows:—

	1st.	2nd.	3rd.
Singular ..	*Nu*.. ..	.. *Bu* or *B* ..	(m.) *Li* or I. (f.) *Ru*, *Ti* or *Tu*.
Plural	*Wa* ..	.. *Hũ*..	*Em* or *Um*.

Nutaínuba Kairabu, nahiinbátibu = If I go to Roseau, I will see you.
Nha bunáhai makáiti = They buried him without a coffin (*bunáhai* = buried him).
Barihúbatina mamáruku = Thou wilt see me to-morrow.
Kátana = Who am I? *Kátahũ* = Who are ye?

Kũa, in combination with a personal pronoun, corresponds to the English "self." It is affixed to that form of the pronoun which ends in *ńni*.

	1st.	2nd.	3rd.
Singular ..	*Nunúkua* ..	.. *Bunúkua*	*Lunúkua*.
Plural	*Wanúkua*	.. *Hunúkua*	*Nhunúkua*.

= I myself, thou thyself, etc.

Arámeta = To hide (trans.).
Arametálua = To hide (intrans.), or to hide oneself.
Narametálua nunúkua = I am hiding myself.

The words *líha* (masc.), and *túha* (fem.), which are really demonstrative pronouns, meaning "this," are used to indicate "him," and "her"; *lóaku líha* = on top of him; *lóaku túha* = on top of her; *tiámati líha* = he is pretty; *tiámatu túha* = she is pretty.

Possessive.

Possessive pronouns are expressed by prefixing the personal pronouns or the letters which represent them to substantives: *nukúsiri* = my father; *nukúsuru* = my mother; *níani* = my wife; *nibáya* = my children.

Íri = name; *Úma* = mouth.

	1st.	2nd	3rd.
Singular ..	*Núri* .. .. (My name.)	*Búri* .. .. (Thy name.)	*Lúri* or *Túri.* (His or her name.)
Plural	*Wắiri* .. .. (Our name.)	*Hắuri* .. .. (Your name.)	*Nhắri* (Their name.)
Singular ..	*Núma* .. .. (My mouth.)	*Búma* .. (Thy mouth.)	*Lúma* or *Túma.* (His or her mouth.)
Plural	*Wắuma* .. .. (Our mouths.)	*Húma* .. .. (Your mouths.)	*Nhúma.* (Their mouths.)

There is no absolute form of the possessive, corresponding to the English "mine," "thine," etc. The answer to, *Kel'a'uli kía?* Whose dog is this? is *Láuli kía* = It is his dog, the substantive *áuli* being required in the reply.

Other possessive pronouns are met with which are compounded of the personal pronoun and the affixes *lūkŭ* or *ékŭ.*

	1st.	2nd.	3rd.
Singular ..	*Núlūkŭ*	*Búlūkŭ*	*Lúlūkŭ* or *Túlūkŭ.*
Plural	*Wắlūkŭ*	*Húlūkŭ*	*Nhálūkŭ.*

Núlūkŭ áuli = my dog; *Búlūkŭ áuli* = thy dog, etc.; *Núkŭ áuli* = my dog, etc.

The particle *kía* is also found in combination with the possessive; thus, *lubuyé-kia* = his own house.

	1st.	2nd.	3rd.
Singular ..	*Nubuyékua* ..	*Bububuyékua* ..	*Lubuyékua.*
Plural	*Wabuyékua* ..	*Hubuyékua* ..	*Nhabuyékua.*

Demonstrative.

The words *líha* and *túha* represent the demonstrative "this" in the masculine and feminine respectively: *líha wŭkŭri* = this boy; *líha sáui* = this gommier-tree; *túha wuri* = this girl; *túha yámati* = this basket.

Líha is used generally, as in English, without respect to gender, in such phrases as, *Ítati líha?* = What is this? *Itália batŭkábali líha?* = Why have you done this?

"That" is expressed by *líketa* (masc.) and *túketa* (fem.). *Ámuye* signifies "other," as in the phrases, *Hália ámuye?* =

Where is the other? *Irúfuti líha, yáwati líha ámuye* = This one is good, the other is bad.

Líkita is used generally, irrespective of gender, in the same way as *líha, líha lúma líkita* = this and that.

RELATIVE.

The relative is not expressed. It is understood in such sentences as, *Lúkuya atŭkáyali* = It is he who did it; *líha mútu wa búnuhai* = the person whom we buried (*wa* = we).

INTERROGATIVE.

Kúta is the only form of the interrogative pronoun.
Kúta bu? = Who are you?
Kúta mútu yáhi? = What person is that there?
Kutúkuya? = Who is it?
Kúte bíri? = What is your name?
Kútae? = What is it?
Kúta ánuku bualúbali? = What disease have you got?
Kúta bu nátŭka? = What am I going to do?

It may, however, be replaced by *íta* in such phrases as—

Ítati? = What is the matter?
Íta bía? = What is the matter with thee?
Itúliu bíri? = What is your name?
Ítati líha? = What is this?

But *íta* can also be used as an adverb.

Itúliu batŭkúbali líha? = Why have you done this?
Itulia biúbri? = When did you arrive?
Ítuba lasirúbuta? = When will he return?
Itúbuku lasirúbuta? = When did he return?

NUMERALS.

There are only four cardinal numerals in modern Carib, viz.,

Ábu = one.
Biaba = two.
Íruu = three.
Biabri = four.

The remaining numbers are expressed by using the words of the French patois of the country.

The ordinals are formed by prefixing *l* or *t*, according to the gender of the substantive, to the cardinals, and suffixing the particle *áni*.

Labánani or *tabánani* = the first.
Libiábani or *tibiábani* = the second.
Liráni or *tiráni* = the third.
Libiabríani or *tibiabríani* = the fourth.
Abakúati, biabakúati, iruakúati, biabrikúati, etc. = once, twice, thrice, four times, etc.
One by one, two by two, etc. = *ába ába, bíaba bíaba,* etc.
Líbiri = half.
Átri = How many ?
Itákara = a little, some.
Búi = much or many (literally "full").
Also *waíriti* = plenty (literally "large").
Su = all.
Úa = not.
Úati útu = there is no fish.
Mútati búrutu = there is no plantain.

(*ni* when prefixed denotes "absence of").

The Verbs.

The verb "to be" is *ía*, which is sounded as two syllables, the accent being on the first syllable. It is conjugated as follows—

		Present.	Imperfect.
Sing.	1st. *Nia* ..	*Iátina*	*Niábuka* or *Iatináhuka.*
	2nd. *Bia* ..	*Iátibu*	*Biábuka* or *Iatibúbuka.*
	3rd. *Lia* (m.)	*Iáti* (m.) or *Iáti*	*Liábuka* (m.) or *Ialíbuka* (m.)
	(or *Tia*) (f.)	(f.)	or *Iiábuka* (f.) or *Iatibuka* (f.).
Plur.	1st. *Wia* ..	*Iátiwa*	*Wiábuka* or *Iatiwábuka.*
	2nd. *Hia* ..	*Iátihũ*	*Hiábuka* or *Iatihubuka.*
	3rd. *Nhia* ..	*Ianum*	*Nhiábuka* or *Ianúbuka.*

		Perfect.	Pluperfect.	Future.
Sing.	1st. *Iahátina* ..	.. *Iahatinábuka* ..	*Iábatna.*
	2nd. *Iahátibu* ..	.. *Iahatibúbuka* ..	*Iabátibu.*
	3rd. *Iáhali* (m.)	.. *Iahatíbuka* (m.) ..	*Iábali* (m.)
	Iáhati (f.)	.. *Iahatíbuka* (f.) ..	*Iábati* (f.)
Plur.	1st. *Iahátiwa* ..	.. *Iahatiwábuka* ..	*Iabátiwa.*
	2nd. *Iahátihũ* ..	.. *Iahatihúbuka* ..	*Iabátihũ.*
	3rd. *Iáhanum* ..	.. *Iahanúbuka* ..	*Iábanum.*

It occurs in such phrases as—

Íta bía? = How are you?
Íta líu líri? = What is his name?
Chevalier *liú núi* = Chevalier is my name.
Inúruti tíú = It is true.
Íruu iátiwa = We are three.

In the present and imperfect the personal pronouns may either precede or follow the verb. In the other tenses they always follow it. When that is the case, the particle *tĭ* is interposed between the verb and the terminal pronoun.

The personal pronoun is suffixed in the following examples—

Karífuna iátina = I am a Carib.
Libúkaye iátina = I am his brother.
Hália iátina? = Where am I?
Wŭkŭrúali = He is a man.
Yarnúaru = She is a girl.
Tiámatu túha = She is pretty.

(*Tu* and *ru* as well as *ti* are forms of the third personal pronoun of the feminine gender.) *Yúru* = a girl; and *úaru* = "she is"; *tuka* = she.

The past is indicated by the termination *buka*, which converts the present and the imperfect into the imperfect and pluperfect.

The perfect in all verbs expresses a past definite action or condition, irrespective of time; thus—

Iahátina = I have been.
Sŭlŭrŭhátina = I have come; but when the period of a past condition or action is defined, the past perfect is employed.
Bínarŭ yahiáhali buka = It was there in olden times.
Kúyarŭ sŭlŭrŭhátina búka = I came yesterday.

The perfect is formed by incorporating the syllable *ha* in the verb: thus—

Iátina = I am.
Iahátina = I have been.
Ba, which is really the verb "to go," is used to indicate the future.
Iabátina = I shall be, literally, I am going to be.
Bátina = I am going and *úa* = to be.

When the personal pronoun follows the verb *úa*, the interposed particle *ti* is omitted in the third person; thus we have *úali* (masc.), *úati*, *úatu* or *úaru* (fem.) and *iáhali* (masc.) *iáhati*, *iáhatu* or *iáharu* (fem.).

Tina is pronounced as if the *i* were omitted, the vowel being so short; so that *iátina* and *iahátina* sound as if written *iatna* and *iáhatna*.

The verb *ía* is often understood.

Yahátina = I am here (*yaha* = here).
Irufátina = I am good.
Ítali? = What is the matter?
Íuáruti = It is true (*íuaru* = true).

In the expression *inaruti tia* = it is (really) true, *iá* is understood between *íuaru* and *ti*.

The conditional is thus expressed:—

Present.		Imperfect.	
Aónuba	.. If it be I	*Aónuba múka* ..	.. If it were I.
Amoróbuba ..	.. If it be thou	*Amoróbuba múka*	.. If it were thou.
Likuyáluba ..	.. If it be he	*Likuyáluba múka*	.. If it were he.
Wakuyáwaba ..	.. If it be we	*Wakuyáwaba múka*	.. If it were we
Hakuyáhuba ..	.. If it be you	*Hakuyáhuba múka*	.. If it were you.
Nhakuyánhaba ..	.. If it be they	*Nhakuyánhaba múka*	.. If it were they.

Likuyáluba, aríukábai lúni lebéluru = If it be he, tell him to come in.

Amoróbuba múka bisikaímuka luni = If it were thou, thou wouldst give it to him.

The past perfect is formed by adding *ha* to *múka*.

Aónuba hámuka = If it had been I.
Amoróbuba hámuka = If it had been thou, etc
Aónuba hámuka, nisikahámuka lúni = If it had been I, I would have given it to you.

The equivalent of "there is" is *íhai*, which is equal to *ía*[1]*i* or *íati*, the final *i* being short for *li* or *ti*, and *h*[1] being inserted for euphony:—

Íhai ába bárura núma = I have one plantain = There is one plantain with me. "There is not" is expressed by *ma* or *íu*.
Mámati bárura = There is no plantain.
Úati útu = There is no fish.
Tíseti Kaírabu? = Is Roseau far?
Matíseti Kaírabu = Roseau is not far.

[1] I am rather uncertain about the existence of this aspirate in the word which I have written *ihai*. It is possible that it should be written *iai*, and that the idea of an *h* being present between the initial *i* and the *a* is due to the false pronunciation of the Carib who dictated the sentence which I have given as an illustration.

ña is understood in those sentences; and, in the first, *ma* is reduplicated).

The feminine of the personal pronoun of the third person, viz., *ti*, is used in the above expressions, and in many others as frequently and as indefinitely as the word "it" is in English: and such phrases as *Tíeri Káiruža?* are equivalent to those in English, like, "Is it far to Roseau?"

Ka = to have.

The verb "to have" is *ka*. It always precedes both the object and the personal pronoun which is the subject:

Kabarurútina = I have plantains (*báruru* = plantains).
Kahálati = It has something in it.
Kilúruti = It bears flowers (*ílue* = flowers), literally, it has flowers.

It really consists of an unchangeable particle, *ka*, which indicates possession, and the terminal a of which is dropped before words beginning with vowels.

The following are illustrations of the use of *ka*:—

(*Yámati* = Basket, the final *i* being changed into *e*.)
Ka yamatétina = I have a basket.
Ka yamatétiba = Thou hast a basket.
Ka yamatétina búka = I used to have a basket.
Ka yamatchátina = I had a basket.
Ka yamatchátina búka = I had had a basket.
Ka yamatebátina = I shall have a basket.
Ka yámati núba = If I have a basket.
Ka yámati búba = If thou hast a basket.
Ka yámati núba múka = If I had a basket.
Ka yámati búba múka = If thou hadst a basket.
Ka báruru núba, nisíkuba lúni = If I have plantains, I will give you some: (*báruru* = plantains; *síka* = to give).
Ka báruru búba, bisíkuba lúni = If you have plantains, you will give him some.
Ka báruru núba múka, nisikámuka ába lúni = If I had plantains, I would give you one.
Ka báruru búba múka, bisikámuka ába lúni = If you had plantains you would give him one.

Possession is also indicated by expressions which correspond in construction with the questions:—

Átria búma? = How many have you?
Átri báruru búma? = How many plantains have you? (*búma* means, literally, with you).

Ába bárury núma = I have one plantain (*núma* = with me).
Ába bárury búma = Thou hast one plantain (*búma* = with thee).
Ába bárury lúma = He has one plantain (*lúma* = with him).

Absence of is expressed by *ma* which is used in the same way as *ka* :—

Mabarurútina = I have no plantains.
Mabarurútibu = Thou hast no plantains.

Transitive Verbs.

Most transitive verbs are conjugated like the verb *átŭka* = to do.

Person.	Present.	Imperfect.
1st ..	*Natŭkaya*	*Natŭkaya búka.*
2nd ..	*Batŭkaya*	*Batŭkaya búka.*
3rd	*Latŭkaya* (masc.)	*Latŭkaya búka* (masc.).
	Tatŭkaya (fem.)	*Tatŭkaya búka* (fem.).
1st ..	*Watŭkaya*	*Watŭkaya búka.*
2nd ..	*Hatŭkaya*	*Hatŭkaya búka.*
3rd ..	*Nhatŭkaya*	*Nhatŭkaya búka.*

Person.	Perfect.	Pluperfect.
1st ..	*Atŭkahátina*	*Atŭkahátina búka.*
2nd ..	*Atŭkahátibu*	*Atŭkahátibu búka.*
3rd	*Atŭkáhali* (masc.)	*Atŭkáhali búka* (masc.).
	Atŭkáhati (fem.)	*Atŭkáhati búka* (fem.).
1st ..	*Atŭkahátiwa*	*Atŭkahátiwa búka.*
2nd ..	*Atŭkahátihŭ*	*Atŭkahátihŭ búka.*
3rd ..	*Atŭkahátinum*	*Atŭkahátinu búka.*

Person.	Future.	Person.	Future.
1st	*Natŭkuba.*	1st	*Watŭkuba.*
2nd	*Batŭkuba.*	2nd ..	*Hatŭkuba.*
3rd ..	*Latŭkuba* (masc.)	3rd ..	*Nhatŭkuba.*
	Tatŭkuba (fem.).		

The imperative is formed by adding *ba* to the infinitive :—

átŭka = to do.
atŭkaba = do.
atŭkábai = do it (*i* is short for *li* = it).
báiba atŭkai = go and do it.
atŭkábai líha = do this.
matŭkábai líha = don't do that.

The conditional is conjugated as follows :—

Person.	Present.	Imperfect.
1st ..	*Atŭkánuba*	*Atŭkánuba muka.*
2nd ..	*Atŭkábuba*	*Atŭkábuba muka.*
3rd {	*Atŭkáluba* (masc.)	*Atŭkáluba muka* (masc.)
	Atŭkátuba (fem.)	*Atŭkátuba muka* (fem.)
1st .	*Atŭkáwaba*	*Atŭkáwaba muka.*
2nd ..	*Atŭkáhuba*	*Atŭkáhuba muka.*
3rd ..	*Atŭkánhaba*	*Atŭkánhaba muka.*

Tíkábuba útu, báruba ába núni = If you catch fish, bring me one.

Nibríbuba yáha, nariakubátibu = When you come here, I will tell you.

Nutaínuba múka Kaírabu, néheru múka mábi búni = If I went to Roseau, I would buy potatoes for you.

By prefixing *ha* to *múka* the pluperfect is obtained.

Atŭkánuba hámuka.
Atŭkábuba hámuka.
Alukurabúbali hámuka nátŭka hámuka ába yámati buni = If you had sold it, I would have made a basket for you.

The object of an action is expressed by placing *lu* or *luni* before the infinitive.

Kátaba basíkai líha ípalu ? = Why are you digging that hole ?
Lúni nabúnaku báruru = It is for me to plant plantains.
Lúni labúnaku kíere = It is for him to plant plantains.
Nisíkuba líha búni lu béheru úiki núni = I give you this to buy meat for me.

A gerund-like form of the verb is found in such sentences as :—

Barumukuyábuka, batŭkúbali = You were sleeping, while you were doing it.

Na ihubátiba mamárŭkă, nasukarúba'i = I will look at you to-morrow, when I am passing.

The termination *úbali*, which is that of the gerund, would be similar in form to that of the future indicative and the present conditional, but for the additional syllable *li* in the former. Another ending of the gerund is *úbame nibrinúbame, neherúbali búni* = when I am coming, I will buy it for you.

The termination of the present indicative, such as it is found in *natŭkaya*, suggests a compound of the infinitive *átŭka* and *ia* = to be, as an auxiliary, so that the verb might be written *natukáia*. This view is supported by the structure of the present indicative of the verb *watikámare* = to work, which is *niwatakimária*, and of that of *akusaku* = to sew, which is *nakusákuya*, which might be written *nakusakúia*. And in favour of this it may be added that I have found it very difficult to decide whether the accent in the above verbs *natŭkaya* and *nakusákuya* should be where they are placed or on the vowels which immediately follow the *k*. When, however, we come to verbs ending in *i*, like *iútiri* = to go and *iabri* = to come, we find their present indicatives to be *niatíria* and *niábria*. Yet even here it might be said that the *i* of *ia* has been merged into the terminal *i* of the verb.

The particle *ha* is incorporated with the verb and personal pronoun to form the perfect.

átŭka = to do.
atŭkahátina = I have done.

This, at least, should be the regular formation of the perfect. But, in conversation, the *ha* is practically dropped and *atŭkahátina* becomes *atŭkátina*. Similarly *watikámare* and *iabri* become *watikamarétina* and *iabrítina* in the perfect. When however, the verb ends in *u*, there is a recurrence to the *ha*, as in *akúsaku* = to sew, the perfect of which is *akusakuhátina*.

Sălŭrŭhali véyu = the sun has risen (literally, has arrived).
Eherahátiwa ába yámati = we have bought a basket.

The perfect may also be constructed by adding *muti* to the infinitive, the personal pronoun being joined to the former.

Sa = to cut.
Sa núnuti = I have cut.
Sa búmuti = Thou hast cut.
Sa lúmuti = He has cut.
Sa wámuti = We have cut.
Sa húmuti = You have cut.
Sa nhámuti = They have cut.
Kŭrákwa = to tie.
Kŭrákwa núnuti, kŭrákwa búmuti, etc.

The imperfect and the past perfect are formed by adding *buka* to the present and the perfect.

In the future, the terminal vowels of verbs ending in *a* are dropped and *uba* is added to the remaining portion of the infinitive; *átūka* = to do; *atŭkuba* = I shall do. The same rule holds good for verbs ending in other vowels; thus

Infinitive.	Future.
Watikámare	*Niwatikamáruba.*
fabri	*Nábruba.*
Akúsaku	*Nakusákuba.*

The imperative ends in *ba*: *átūka* becomes *atŭkaba*; *watikámare, watikamáreba*; *iábri, iábriba akúsaku, akusákuba.*

Reflective verbs are formed by adding *kúa* = self, to the infinitive of the active; *arámeta* = to hide, *arametákua* = to hide oneself.

They are conjugated like the active, the imperfect and past perfect being compounded of the present and the perfect respectively and *búka*, and the perfect and future being characterised by the incorporated *ha* and the terminal *úba* respectively; *arametákua* (present), *arametakuahátina* (perfect), *arametákua búka* (imperfect), *arametakuahátina buku* (past perfect), *arametakuánuba* (future), *arametakúaba* (imperative).

An intensified reflective is formed by adding the reflective pronoun to the simple reflective; thus

Narametákua núni kúa, etc., = I am hiding myself, etc.

The conditional follows the same rule that governs its construction in the case of active verbs: and so the present, imperfect, and past perfect of *arametákua* are *arametákua núba, arametákua núba múku* and *arametákua núba hámuka.*

It may be observed that an *n* has been introduced in the future tense between the terminal *a* of *arametákua* and *uba.* This has apparently been done for the sake of euphony. The letter *k* is similarly introduced in the future of *ákaba* = to hear, which is written *nakabákuba.*

In the passive, the tenses are constructed by placing the personal pronoun after the reflective verb, the particle *ti* being interposed between them as in the conjugation of *ia* = to be. The verb *ia* = to be, is evidently understood in all the tenses of the passive:

Indicative.	Conditional.
Arametakuátina, aramatekuátibu, etc. *Arametakuátina búka, etc. .. ..* *Aremetakuahátina, etc. .. ..* *Arametakuahátina búka, etc. ..* *Arametakuabátina, etc.	*Arametakuánuba, etc.* *Arametakuánuba múka, etc.* *Arametakuánuba hámuka, etc.*

Though there is no difference in construction between transitive and intransitive verbs, *arúmuka* = to sleep, and *asúaha* = to cut, becoming *narumúkaya*, etc., and *nasuáhaya*, etc., in the indicative present, etc., yet some verbs are conjugated like *ia*, the personal pronoun being suffixed and the particle *ti* interposed between it and the verb. The following are examples of such verbs:

atunuhátina = I am coughing.
asuchátina híta = I am spitting blood.

I have not been able to trace any rule which determines such a difference in construction among verbs; but the verbs conjugated like *ia*, such as the two last-mentioned, are generally, though not always, those which denote a condition of mind or body rather than an action. This is noticeable in such expressions as:

Anuknátina = I am ill.
Abiruátina = I have fever.
Makrabátina = I am thirsty.
Lamátina = I am hungry.
Hanuhutétina = I am afraid.
Kaifutétina = I am afraid.
Ibisikatina = I am ashamed.
Kŭrétina = I want.

Some of these may be considered as adjectives combined with personal pronouns, the verb *ia* being understood, such as—

Makrabátina from *mákrabu* = thirsty.
Lamátina from *láma* = hungry.

But many of them govern either an infinitive or a noun substantive. Thus we find such phrases as—

Hanuhutétina háwe = I am afraid of a *tête de chien* (a snake).
Kanisátina bárara = I like plantains.
Kátu kurétibu? = What do you want?
Arúmuka kŭrétina = I want to sleep.
Marúmuka kŭrétina = I do not want to sleep.

Even these also are merely compounds of either nouns or adjectives with personal pronouns. Just as *anukuítina* is derived from *anúkai* = disease, and *ábiruátina* from *ábiru* = fever, so *hanuhutétina, kanisítina, kũrétina*, etc., are formed by adding *na* to *hanúhuti, kanusi, kũre*, etc., *ti* being interposed.

Chíseti, kanísiti, mátati, etc., are examples of impersonal verbs or rather of composite words used as such.

Chíseti, núni nasúaha wéar = I like to cut wood.
Kanísiti núni nátũka yámati = I like to make baskets.
Matátini watakímare = I like to work.

The third sentence is probably ungrammatical and should have been *mátati núni nitatakímare*.

In the first three sentences, the infinitive is used as if it were a substantive with the personal pronoun *ni* prefixed, the *i* having been dropped before *asúaha* and *átũka*, because they begin with a vowel. They should be rendered, if literally translated, as it pleases me, or literally, it is my desire or pleasure to cut wood, to make baskets, to work.

The word *kanísiti* is derived from *ánisi* = heart and hence desire or pleasure. The letter *k* when prefixed thus is short for *ka*, which denotes entirety or completion as well as possession: so that *kanisítina* and *kanísiti núni* may be considered to mean, it is entirely my desire or pleasure, or I have the desire or pleasure.

Verbs of this form of conjugation govern the personal pronouns in the dative:—

Chisítibu núni? = Dost thou love me?
Chisétina búni = I love thee.
Kúriti núri núni = My tooth pains me.

Peculiarities of the Carib Language.

The term "Carib."

A modern Carib is called by his countrymen, *Karífuna*. In referring to the whole race of Caribs, the word *Karínaku* is used.

Raymond Breton does not mention *Karífuna*. He calls a Carib *Callínago* and several Caribs *Callínagoyum*. The word *Callínago* is evidently the same as *Karínaku*, the *r* of which has been incorrectly replaced by *ll*.

The name given to themselves by the Caribs of South America is *Karínia*, which is probably derived from *Karínaku*.

It is not, however, from these words that the name Carib has originated. The leeward coast of Dominica is called *Kaírabu*,

which is also applied to Roseau, the capital of the island, whose other name is Sáiri. Raymond Breton wrote it Caerabone. It seems to me that the word Carib owes its origin to the answer *Kaírabu* given by the Indians of Dominica to the Europeans who first asked them to what country they belonged. Hence the peculiar term Cariboo would, in spite of its singular sound, be really the most correct of all similar names.

Language of the women.

Though the language generally speaking is the same among both sexes, there are certain words in it which are used by the women only. The following are examples of this peculiarity.

	Used by men.	Used by women.
Moon	*Núnu*	*Káti.*
Rain	*Kŭnúbui*	*Húya.*
Fish-hook	*Kúwi*	*Búre.*
Cassava root	*Kíere*	*Kái.*
Son	*Wŭkúri*	*Éyeri.*
Daughter	*Wŭri*	*Yáru.*
Pepper	*Bŭrmŭi*	*Áti.*
Fowl	*Álira*	*Káyu.*
Sea	*Bárana*	*Bárawa.*

The most probable of the explanations suggested for the above is the one which supposes that the women who use such words are descendants of some who were captured by the Caribs from other Indian tribes. But this theory is not without its difficulties. All the Carib women use those foreign words, and none of the men do so. It is evident, therefore, that though those words may have been thus introduced into the language, there must have been some custom which, while it made their use general among females, limited them to women only. It has been suggested that the boys used these words until they were of an age to associate with men, when they discarded them as effeminate.

Another theory might be advanced on the subject, and that is that the strange words were introduced by Carib women who had been captured by other tribes and were afterwards rescued.

The probabilities are that, if either theory is correct, both are so. For the capture and rescue of women must have been events of very frequent occurrence among the Caribs and the tribes with whom they were constantly engaged in war.

The resemblances between certain of these alien words and some in the Arawak language point to that tribe as the most

probable source of many, if not of all the terms peculiar to the Carib women.

For example, the word *kátí* used by Carib women for the moon is similarly employed in Arawak. While the Caribs in South America have adopted the Macusi word for one, viz., *owí*, the insular Caribs call that numeral *ábu*, which is almost the the same as the equivalent Arawak word *ábaro*.

Words adopted from the French and Spanish.

Many words have been adopted by the Caribs from the Spanish as well as from the French or the French patois of the island, the necessary vowels having been added to the originals to make them conform to the usual Carib orthography.

The following are from the Spanish :—

Bácasu (*vaca*) = cow.
Cábara (*cabra*) = goat.
Cábayu (*caballo*) = horse.
Cáta (*carta*) = paper.
Sálu (*sal*) = salt.
Kusíu (*cuchillo*) = knife.
Vínu (*víno*) = wine, etc.

From the French or its patois are derived :—

Tábula (*table*) = table.
Pálatu (*plat*) = plate.
Tásu (*tasse*) = cup.
Véru (*verre*) = glass.
Cúyeru (*cuillère*) = spoon.
Búteyu (*bouteille*) = bottle.
Sápote (*chapeau*) = hat.
Símisi (*chemise*) = shirt.
Rúbu (*robe*) = dress.
Búrike (*bourrique*) = donkey.
Mútoni (*mouton*) = sheep, etc.

It is singular that the Carib word for salt should be *sálu*, which is evidently derived from the Spanish, *sal*. It is probable that the Spanish word was adopted and used in the place of the original Carib term which became forgotten. For it is scarcely to be supposed that a people living by the sea would not have a word in their vocabulary to express salt.

Examples of Modern Carib.

Original.

I.

Hália lúba narímetu Baraísiri lúa líri. Kanianítina núma, wáma bíabri níbaya, bíaba wăkări, bíaba wăria. Niwatakímaru nátăka yámati, nasuáhaya lóni wéwe, niútiri atíaha. Núani arimétatu aútubu, takusákuya, tabuáhaya aíkini, tasibákuya, tahărăhaya kíere, tahulúhaya báruru, tabuitáhaya batírulu, tiwatakimária tísari. Níbaya su han awáita; ábana liha wăkări wairíhali, liwatakimária lonúkua. Nukúsuru Karífuna yaru. Múlatu yari nukúsiri. Napúkasa Warísima. Láuse alóaha núani, niútiri Baraísiri. Yáhi nhapúkasa su níbaya.

Translation.

I.

The place where I live its name is Baraísiri. I have a wife and four children, two boys and two girls. My work is making baskets, cutting down trees, fishing. My wife stays at home; she sews, she cooks food, she washes, she grates cassava, she pounds plantains, she sweeps the house, she works in the garden. All my children are grown up. One of the boys is big; he is working for himself. My mother was a Carib woman. My father was a mulatto. I was born at Warísima. After I took a wife I went to Baraísiri. All my children were born there.

Original

II.

Hiakítina láuse láue nukúsiri. Láuse láue nukúsiri narímetu túma nukúsuru. Bínarũ háli láuse táue nukúsuru. Maríčtina (from French *marier*) *lubarákiwa táue nukúsuru. Atakatu nukúsuru huit* (French *huit*) *tíbaya. Hílaha six* (French six); *werémetu búaba. Táue nukúsuru, Warísima wa búnahai. Bínarũ hiláluba ába Karífuna, nha bunáhai lubuyékua. Kuliha hilákua ába, buhúkuti wa bunáhai. Bínarũ hiláluba ába mútu, nha bunáhai makáiti; rótiu wewe lúbuse, rótiu kíu láuse; rótiu ába púlatu* (either French *plat* or Spanish *plato*) *lúaka lísibu ma buísola húwa lukúrũku. Hawgurákua nha mútui nhakabanárũku.*

Translation.

II

I was little when my father died. After my father died I lived with my mother. It is a long time since my mother died. I married before my mother died. My mother had eight children. Six died and two remained. When my mother died, we buried her at Warisima. In olden times when a Carib died we buried him in his own house. Now, where anyone dies we bury him outside. In olden times when a person died, they buried him without a coffin; they put a board under him, they also put one over him; they put a plate on his face to prevent the earth from getting into his eyes. They wrapped him up in his bed-clothes.

Original.

III.

Lubarákiwa iútiri ahunúkwa, wa súaha waíriti wéwe lawarúhatu. Háwara nháluba, iútiri akútai. Kutawahúluba, útiru araúhai. Lubarákiwa wa ákutu, abaihátiwa. Su wa máti nbútaha líha kárau lóni wa kútuha. Kíbati lánŭkă wéyu lubarákiwa lákutu waíriti wéwe. Hikuhalúbali wátu, bálisi tilihúluba, iútiri awáuha loni wa abúnaku kíere. Wa súaha kíere akusu, loni wa abúnaku.

Translation.

III.

Before we begin planting we cut down the large trees to let them get dry. When they are dry we begin to set fire to them. After we have burnt them we clear the ground. Before we burn, we cut away the undergrowth. We collect all the undergrowth together to burn it. The large trees are a long while before they burn away. When the fire is extinguished and the ashes are cold, we begin digging to plant the cassava. We cut up the cassava sticks to plant them.

Original.

IV.

Átŭka kréeti mútu ábu báti, líuti árabu asúaha luwéweri lóni átuku lúbana. Sulahúluba asúaha luwéweri, lawurákuni iulúmuti túmase lúbana lóni lukiwéreha. Sulahúluba akiwéreha su luwéweri, liútiri asánaha húwa, lóni lisíkuni lunakúburi. Rulúmuti wákabu ipulúruku buíkita lumuti húwa, ipulúruku lúa

wákabu. Bárati wéwe, lahubila húwa láo wákabu. Lakŭrákua misípeti wéwe láo akúruka láaku líbiri wákabu, kŭrákua yatiwa ruayati wewe láaku músipe. Ruáyati wewe, bayarákua lía líri. Liútiri ásuka wirikáburi, láni lakŭraku láaku, láni labútaha lúbana. Labútaha wirikáburi lao musíere.

TRANSLATION.

IV.

When a person wants to build a house, he goes into the woods to cut the wood to build his house. When he has finished cutting the wood, he drags it and puts it near to his house to prepare it. When he has finished preparing all the wood, he begins to dig the ground and fix the posts. He puts the posts in the holes; he fills the holes with earth round the posts. He takes a pole and he rams the earth round the posts. He ties long poles with creepers to the tops of the posts; he ties cross-poles on the long ones. The cross poles are called *bayarákua*. He goes and cuts poles to tie on top to make the roof of the house. He covers the poles with leaves (*musíere* = a broad short leaf specially used for that purpose).

JUNE 15TH, 1897.

A Special Afternoon Meeting

was held on this date at the South Kensington Museum, when Mr. A. P. MAUDSLAY gave a lecture on the "Maya Monuments and Inscriptions in Central America."

The Meeting was attended by many of the Fellows, and the interest of the lecture was increased by the exhibition of a collection of casts from the various monuments spoken of.

A vote of thanks was passed to Mr. Maudslay on the proposal of Mr. CLEMENTS MARKHAM.

A Year *in* Azimba *and* Chipitaland: *the* Customs *and* Superstitions *of the* People. By H. Crawford Angus, Esq.

Leaving Blantyre, British Central Africa, in October, 1895, I proceeded to Azimba and Chipitaland for the purpose of hunting and of obtaining labour for the plantations in the British Protectorate. I was away for five months on my first journey and after a short visit to Blantyre I returned and spent six months, again in the same country.

During the period of twelve months or so above indicated, I travelled over large tracts of country; reaching as far as Angoniland in the north and in the south as far as Téte on the Zambizi: I penetrated into Chipitaland as far as the Kapochi River at its junction with the Luia River, a tributary of the Zambizi, returning by Katusa and Kasitu to the Revubwe and thence to Blantyre. A glance at a recent map of Central Africa showing Portuguese territory will explain the route taken.

I found the people warlike and hardy, living, as they always do, at war with some one—fighting is second nature to them, and their deadly accuracy with the bow generally secures them the victory in a fight with either the Angoni or Chikmeda. I found them friendly to the English, and only on two occasions in the whole of my wanderings had I to defend myself from hostile attack. On one occasion my assailants were under the impression that I was a Portuguese, and this cost me one of my men, who was killed by an arrow; but I soon beat them off, and they assumed a more peaceful attitude when they discovered that I was an Englishman, and they brought peace offerings and eventually paid compensation for the man who was killed.

On the other occasion, some Chikmeda from Makanga tried to rob some of my men of their food, and, on their resisting, fired on them, but on our opening fire on them in our turn they soon decamped with some damage.

Large numbers of elephant are killed every year in Chipita and Azimbaland, and game is plentiful, consisting of buffalo, rhinoceros, eland, hartebeeste, zebra, sable-antelope, and smaller buck. Lions and leopards are plentiful and do great damage among the village herds and flocks.

I had some good "bags"; my biggest "bag" in one day consisted of seven buffalo, three eland, one rhinoceros and one leopard.

With regard to the future of trade and commerce in those districts, and the prospect of their proving a source from which

native labour might be drawn, I am of opinion that under the present rule nothing can be done.

The Portuguese within whose territory those districts lie favour the evil system of letting out their different districts to any one who will pay them tribute or taxes, and they shut their eyes to anything and everything that goes on as long as they are regularly paid.

A typical case is Chimsinga, the great Makanga chief. He is supplied with powder and guns by the Portuguese, and is allowed to levy war whenever he wishes as long as he pays a certain yearly tribute to his patrons.

Chimsinga's chief delight is in killing the people who are helpless, and in slave catching, and he levies war on all around him, on every one whom he thinks weaker than himself. He has had, I ought to say, three bad beatings this year, in all cases losing large numbers of men; when he attacked Kotaga this year I was not three miles from the place where he was fighting, and could plainly see his men running for their lives, pursued by the relentless Chipita with their deadly bows and poisoned arrows.

The effects of this evil system of government are, that the natives hate the Portuguese and distrust and despise them so much that I am of opinion that any Portuguese paying a visit to Chimsinga at the present time would run a poor chance of his life.

The price of slaves averages about 4*s.* to 6*s.* each, and children from 3*s.* to 5*s.* each; the chief market is Téte, on the Zambizi, the Portuguese headquarters there, where a ready sale is found among the Portuguese police and servants, and among the officers even and other inhabitants.

I am certain that until peace is secured to the inhabitants of these countries and the confidence of the people gained by conduct free from deception and treachery, the country must remain unsettled and uncivilized. Who can expect men to turn to profitable work when their absence is seized on as an opportunity of raiding their village, and they return to find their houses a heap of ruins, their relatives fled or slain, and their wives and children taken captive to be sold as slaves among the servants of a nation which in violation of every treaty and at the sacrifice of all honour and humanity, still countenances, yea, even nourishes, the detestable trade in human flesh?

The Azimba are a people inhabiting the country lying to the west of the Shiré river, between the Mwanza and the Revubwe rivers; they can hardly be considered as a distinct tribe, though they undoubtedly belong to the Bantu race: their language is allied to Manganja but is intermingled with Chickmenda and Chipita.

Before the arrival of the Angoni (Zulus) in the country now known as Angoniland, the district which I have above indicated and which may be called Azimbaland was inhabited by a tribe of unmixed Manganja under a very powerful chief named Kasuza. Soon the Angoni began their attacks and after some years of brave but fruitless struggle the chief Kasuza and his people resolved to seek a home elsewhere, and set out with all their belongings for the territory of the great Makanga chief Kankemi, to whom they made submission, and by whom they were for a time well treated; but Kankemi soon began to fear their numbers and power and finally disposed of the difficulty by an indiscriminate slaughter of his guests. Old Kasuza and most of his people were killed, but his wife and two children and a few others escaped and returned to their old country, where they found many of their old tribe and numerous aliens settled and able to defend themselves from the Angoni. These people elected Kasuza's wife Nyangu to be their chief, and she remains so to this day, though now old, and blind, and a cripple; but her son is the virtual chief and rules in her stead.

The comparative peace enjoyed by the people under Nyangu and their ability to hold their own against the Angoni, has induced the settlement of many aliens among them from time to time—Chikmeda, Chipita and runaway slaves from Angoniland and others, and the consequent intermarriages have produced a race very different in language and customs from the old Manganja tribe.

Customs, Superstitions, etc.

"*Mzimu*"—*Spirit Worship.*—Mzimu is the name given to that unseen power which the natives believe in, but cannot understand. There are, in every village, small houses consecrated to the use of this spirit, and in these houses are placed grain, flour, pipes, tobacco, mead and beer, the offerings being generally accompanied by prayer or thanksgiving for some prayer granted. There is in the native idea evidently a multiplicity of spirits, and the houses built for their use vary in number according to the number of spirits which the builder believes in or worships. One house may have in it two temples, and another may have five or as many as eight; the worship however is the same for all.

In each village or collection of villages, there is a high priest or *mambu* whose duty it is to propitiate the spirits and to forward on all prayers and supplications. A man wishing for success in hunting, or for children, or for a good crop, or for rain, will make his wife brew beer and will call up the *mambu* and all the villagers, giving the beer into the hands of the

mambu. The *mambu* pours a small quantity of the beer into a receptacle in each temple and a quantity is spilt on the ground, and he then recites a form of prayer in accordance with the wishes of the supplicant, all the villagers joining in a kind of moaning chorus. The *mambu* then distributes the rest of the beer among the suppliant and his friends—he is supposed to give an immediate answer to the prayer.

A man returning from a journey, before he enters his house or the house of a neighbour, will go with his wife and kneeling and clapping hands in front of the *mzimu's* house, will return thanks for his safe arrival.

A man wishing for the death of an enemy will go to the temple with an offering before taking any steps to carry out his wishes.

The *mambu* is generally a pretty wide-awake sort of a person, and is quick to take advantage of any power he may obtain over a suppliant.

In the native mind this unseen power appears to be divided into numerous spirits each with special attributes, and whose numbers are not known. There is the spirit which presides over crops and rains, the spirit which protects against witches, the spirit of hunting, the spirit of health, the spirit of child-bearing and numerous others. A man may perhaps have only two temples erected, and on a calamity befalling him he will go to his *mambu* and seek advice in his trouble; he will most likely be told that he has forgotten one of the spirits.

The worship is inextricably mixed up with sorcery, sensuality and crime.

Ula.—The oracle. The *ula* plays the most important part in native life of any belief existing in Central Africa; it is in close alliance with spirit worship, and is worked by the *mambu* or high priest only.

The *ula* is a small cup round the edge of which are fixed a number of lumps of beeswax at intervals; in the cup is placed a small horn, the base of which is covered with beeswax coming to an oval point, and inside the horn is placed some supposed powerful medicine; the cup is held in the left hand and the right grasps a small rattle; the cup and rattle are then shaken slowly and rhythmically with a circular motion, the result being that the horn in the cup wobbles about, now striking this side and now that side of the cup, the *mambu* professing to foretell the future by the number of times it strikes certain spots of beeswax on the side of the cup.

The *ula* is used principally to discover whether a certain event has been the act of a spirit or the act of the *mfiti* or witches.

When a man is taken ill, however slightly, his friends will go to the *mambu* and request him *Kuombesa ula* (to consult the oracle), and tell them the cause of their friend's illness, its remedy, and whether he will recover; the *ula* is then consulted and the answer given. If the answer is that some one has bewitched the patient and it is such and such a man, the man named is instantly accused and is made to drink *mwasi*, ordeal poison; if he dies the sick person is supposed to recover, if not the *ula* is said to have lied, and another *ula* is consulted. In case of the answer being the "spirits have afflicted him, he has offended some spirit," an offering of beer is generally placed in all the temples and sometimes a new temple is built when the spirits are supposed to be propitiated.

In all cases of perplexity or a wish to know the future, the *ula* is consulted. A man going fishing or hunting will consult the *ula* as to his prospects of success; or going on a journey he will inquire as to his safe return, and his actions are irrevocably guided by the answer received.

I may mention my own experience of the *ula*.

I was at a village on the Revubwe awaiting the return of messengers whom I had sent to a distant chief and about whom I was becoming anxious, so more in the hope of catching a high priest "tripping" than anything else I consulted the *ula* as to when my men would return; the answer was "send two men to-morrow to Chuwali" (a village about fifty miles distant and quite away from the route which my men would have to take), "and they will return with your messengers in four days."

I sent the two men as directed, and in four days they returned with my messengers, who had arrived at Chuwali on the day that they had arrived there. I asked my messengers why they had gone to Chuwali, as it was quite out of their way; their reply was that they had heard that there was "war" on the direct road and they had avoided it accordingly; so I did not catch the high priest "tripping," and without further comment I present the episode to the Society for Psychical Research.

Witchcraft—"*Mfiti*."—Witchcraft, as in all parts of Africa, is much believed in, and all sorts of charms and medicines are used to ward off the *mfiti*, which in the native's imagination dog his existence.

The *mfiti* is believed to be an eater of human flesh, and all deaths are attributed to the desire of the *mfiti* to devour the bodies of the dead. In the case of a number of deaths in a village a council is called, and the existence of *mfiti* is declared. *Mwasi*, or ordeal poison, is produced and drunk by all the

inhabitants; should no death result from this, the *ula* is then consulted as to the location of the *mfiti*, and another village is probably indicated, and again *mwasi* is produced and drunk by the village so denounced and so on until the *mfiti* is at last supposed to be discovered.

On a death occurring, the body is carefully guarded against *mfiti*; the body is allowed to lie unburied in the house attended by watchers until it is much decomposed and in a state unfit for even the *mfiti* to consume; it is then buried. While a body is lying unburied, people will not walk out at night except in bands, as the *mfiti* is supposed to be abroad.

Every house has its *mfiti* medicine, generally over the door of the house to ward off evil, and in case of a death occurring in the house, the medicine is supposed to have lost its power, and a new supply is obtained.

"*Mwasi*"—*Ordeal Poison.*—*Mwasi* is obtained from a tall grey-barked tree with dark round leaves which is to be found high up in the mountain gorges, frequently at the side of a stream; from the bark of this tree the *mwasi* is produced as follows. The accused person or persons and their accusers and their friends proceed in search of the bark, and when a sufficient quantity has been collected it is pounded in a native *utondo* or mortar, the pounded bark is put into a small cup and water is added; a small stone heated to redness is then dropped in and the poison is then drunk, the accused man, before drinking, saying, "I am innocent of that of which I am accused. If I lie, may this *mwasi* kill me." If the swallowing of the poison is succeeded by vomiting, this will generally occur within four hours and the man is safe and *therefore innocent*. In fatal cases death generally ensues within twelve hours, but in some cases not until eighteen or even twenty-four hours.

In order to account for the fact that while one man may die of the poison, another may escape, it has been said that the quantity given is varied by the witch doctor, or that he in certain cases only adds some other ingredient which has fatal effect, but to any one who has seen *mwasi* administered, such an explanation will not hold good, and the only conclusion to which I can come on the subject is embodied in the old saying, "What's one man's meat is another man's poison."

Deaths from *mwasi*, I should think, average as low as ten to fifteen per cent.

"*Maliro*," *or Death Ceremony.*—On the death of a man, his relatives and friends collect outside his house and mourn for a period extending over four or five days, singing dirges all day and at night firing guns and beating drums, all the time keeping a careful guard over the body. The near relations mourn apart,

walking up and down, wailing and beating their breasts and throwing ashes and dust on their heads.

On the day of burial, the burial party collects, and all the dead man's effects are burned; the body is then carried to the grave amid more firing of guns and wailing. On the return of the funeral party from the grave, the deceased's house is pulled down, his pots broken and pieces of cloth hung on sticks over the ruins: but this frequently does not occur till some time after the burial.

About a month after the funeral, a beer drinking takes place, and all the friends of the deceased shave their heads and the proceedings are at an end.

During the mourning, large quantities of food are supplied to the mourners, but no beer is drunk.

Human sacrifices.—In Azimbaland the custom of sacrificing human victims on the graves of the dead still exists.

When a chief or any one of importance dies, presents of slaves are sent in by all the neighbouring chiefs as an offering to the spirit of the departed. The women slaves must be young and comely and the men must be youthful or middle-aged. On the eve of the ceremony the victims are all gathered together and carefully washed and their heads oiled and painted red; they are then dressed in all the most gorgeous clothing available, prints, blankets, beads, brass wire, red cloth, etc.

On the morning of the burial the victims are led out and feasted, fowls, goats and other food being prepared for them: they are then marched off to the grave marching with an escort in front of the body of the dead chief; on arriving at the grave they are led forward to the brink, and after a blow on the head with an axe their throats are cut and they are thrown in.

When all the victims are despatched, the body of the deceased chief is laid on the top and the grave is filled in. Should the victims be too numerous to allow of their being placed in the grave, they are killed on the top of the grave and their bodies left exposed.

Native law.—Native law is in many respects wise and just; based upon the opinions and desires of *the people*, it is undoubtedly popular, and though of course much entangled with superstition, it is wonderful how in some points it comes up to the standard of European justice. The accused is allowed to plead for himself, and witnesses are called to establish and prove a point.

False evidence is punished by death or a heavy fine. Though the chief is the superior power, yet his headmen and people really form a sort of jury, and the chief, however powerful, dare not act against their verdict. A man accused of murder

has the choice of several courses should the case go against him. If he knows he is guilty he will either give himself as a slave to the heirs of the dead man, or, if he has any human property such as a wife or a child, he can give one of them instead. If he is innocent, he will appeal to *mwasi* (ordeal poison), which will never be refused him, and in case of his surviving the ordeal, he can claim compensation of three goats from his accusers. A guilty man will not drink *mwasi* because the native idea of the power of *mwasi* to distinguish between the guilty and the innocent is so deep-rooted that, to a guilty man, it would be like choosing certain death.

Theft by night is punishable by death. Theft by day is punishable by a fine. Adultery is punishable by death, unless the accused has property sufficient to satisfy the law, but he can claim the ordeal *mwasi*, or the ordeal by hot water, in which case he plunges his hands and arms into a pot of boiling water slowly three times up to the elbows; should the arms blister and peel he is guilty; should those symptoms not appear he is innocent, and compensation is paid him.

Petty misdemeanour and even impertinence are also brought to trial, and punishments for such breaches of the law inflicted. While the question of guilty or not guilty is decided by the native jury, the final decision as to the punishment lies with the chief, who has the right to mitigate the punishment in any case at his own discretion; and a man confessing his guilt, and throwing himself on the mercy of his chief, *Kupata myendo* (to catch hold of his legs), is rarely denied mercy.

A wise and merciful chief will have a thousand men ready to defend him in an emergency, while a brutal and cruel chief will have no one to rely on in time of trouble. I give a case of a chief's justice. I happened to be at the village of Kasuga, one of the biggest Azimba chiefs, when some men came in, and falling before him said, "We are your children, you are our father, and we come to appeal against your brother at the Dwenilo River, whose slaves we are." Their story was that this brother of Kasuga, one of Kasuga's headmen, had that day sold some people to another chief for salt: among those sold was a child of one of the complainants. The man was a slave, but he had married a free woman, and therefore his child was by law free. In spite of this, however, his child had been taken and sold. Kasuga instantly sent a messenger calling in his brother, of whom he promptly asked why he had done this thing. The reply was, "Oh, my brother, what does it matter, the complainant is a slave: you are surely not going to take a slave's part against me who am so powerful." Kasuga looked at his brother and said, "Unless the child you have sold is delivered

to me to-morrow, you leave my land and I place another headman there in your stead; also you shall give your own child as a slave to the man whom you have wronged." The brother went away, and next morning brought back the stolen child and his own child as ordered. Kasuga took the stolen child, and returned it to its father; then he said, "Oh, my brother, you are wise; take away your own child. I let you off the punishment, but don't do it again; how can I be strong in war, if my people are treated unjustly?"

Poisons, medicines, and native surgery.—Among the numerous trees and shrubs which grow in the country, many valuable drugs may undoubtedly be obtained. Many are known to the natives, and are used by them in cases of sickness. This knowledge is, however, guarded most jealously; but by feigning sickness, and in some cases being really ill, I have collected a few of the most important. One of these is, so far as I can discover, a powerful anæsthetic, and I have on more than one occasion used it with great benefit. The drug is a root which is boiled in water, and the decoction is then applied to the part affected; the application continues till pain ceases.

In a case of toothache which had given me several sleepless nights, I found this drug most efficacious, the pain, after several applications, ceasing, and in a few hours a small quantity of pus issued from the tooth. The sensation produced is much the same as that produced by cocaine, but rather more powerful, and the fingers when immersed in the liquid become quite numb.

Another much-used drug is that for procuring abortion, and I have collected a small quantity of it. The action is quite harmless, and it generally takes effect in course of two or three days; the effect is said to be lasting, inasmuch as a woman, having taken this drug and at some future period desiring to become a mother, will go to the medicine man and obtain another drug which will counteract the effect of the one taken perhaps years before. I was unsuccessful in my attempts to obtain a specimen of this antidote.

There are several efficient blisters known and sometimes used, but the native is much averse to making use of a remedy which will give him pain, however beneficial its effects may be.

Cupping is much resorted to. The instrument used is generally a small horn open at the tip as well as at the base, the tip being surrounded with beeswax. The part to be cupped is first lanced with a small knife, and the base of the horn placed over the part affected; the operator then places his mouth to the open tip of the horn and sucks out the air, closing the hole at the tip by forcing the beeswax over it with his tongue; a considerable quantity of blood can thus be drawn off.

There are many poisons in use among the natives, the most powerful being obtained from the gall of the crocodile, and also from the gall of the hartebeeste. Death generally takes place within half-an-hour after drinking either of these poisons.

A chief, who had designs on my life, sent me a present of a pot of native beer, but luckily I was warned when about to drink it. I administered a portion of it to a fowl, and death occurred in fifteen minutes. The poison used was from the gall of a crocodile. There are two kinds of poison used for the tips of arrows, the one and only kind known among the Yaos being used for killing game; the part touched by the arrow being cut out, and the rest used for food.

But in Azimba and Chipitaland a much more deadly poison is used, namely, the "war poison." The action of this poison is most powerful, and there is no known remedy for it; the slightest scratch by an arrow tipped with this poison means certain death.

This poison is known only to the chiefs, and the secret is most jealously guarded; the poison is collected by them only and served out to their men, who pound it, and cover the points of the arrows with it.

I was fortunate enough to see a man who had been wounded by one of those arrows, and I watched the symptoms till his death.

The doomed man had been wounded slightly on the lip, the arrow having just grazed him and raised the skin. In about fifteen minutes after being struck he began to tremble, and at last fell to the ground, his limbs twitching violently; in about six hours his arms and neck began to swell, and assumed a dark and puffy appearance: shortly afterwards sores began to break out and his whole body assumed a swollen and unwholesome appearance, the sores increasing in size and exuding an unhealthy matter.

In about twelve hours after severe struggling and violent paroxysms, death ensued. Strange to say, the wound on the lip where the arrow struck had a quite healthy appearance, and did not swell or present any abnormal condition. The temperature during the whole time was high, 103° to 105°, and the pulse fast and feeble; towards the end the pulse was not noticeable at the wrist, and the temperature fell considerably below normal. A few hours after death the body was so decomposed that it was impossible to touch it, the skin peeling off wherever a finger was laid.

I have obtained two of those arrows, their points covered with the poison.

To attempt to describe the manners, habits, and etiquette of the people would be a labour which I am not at present able to undertake, and would occupy a much greater space than would probably be at my disposal.

Toaripi.

By the Rev. Dr. James Chalmers.

The Toaripi or Motumotu tribe, situated in the Gulf of Papua in Freshwater Bay, is perhaps the most interesting of all our New Guinea coast tribes. Until lately they were the terror of all the other tribes from this to Kerepunu or Kerpara, and verily believed that they had a right to take what they desired from every plantation they found. Had the people of a village only the courage to remain at home when the Toaripians were journeying, and when they came to their village receive them and treat them to food and cocoanuts all was well, and they were left unmolested, but on their arriving at a village and finding all the inhabitants gone, they killed every pig they found and robbed all the plantations, and wound up by turning the houses into w.c.s. Some years ago they took charge of Kerepunu over a quarrel about the selling of sago. On their way down the coast and near to Round Head some na ives ashore insulted them; they anchored the canoes, tracked the bushmen, and on nearing the villages were met by an armed party who stood to defend their homes, but being of no use before the marauders, they fell back and made for the hills. The chief of the inland tribe, who with his people came out hurriedly to defend their homes, was the first to fall mortally wounded, and after his people decamped the Motumotuans clubbed to death all wounded ones they saw, including the chief.

In one afternoon they killed thirty-six men, women, and children at Kabadi, and at Partanu, inland of Hall Sound, a few years ago they made a nearly clean sweep of the village.

Once I was going to Port Moresby overland and had as carriers eight men, but on it becoming known we were going by land, a large party of nearly two hundred formed to accompany us as far as Maiva, and then to Mekeo and trade. It was merely a small army travelling, and wherever we were seen approaching, fear took possession of all hearts until they saw white clothes in the crowd. Between Iokea and Oiapu the sun was very hot and the sand very heavy, and we had several rests and smokes. At one of these rests, about midday, sitting beside me were a number of men from fifty to sixty years old, and they were comparing the present with the past. Thinking I was asleep they roused me and said something to the following, viz., "How different this journey is to all others, as formerly we simply robbed every cocoanut grove and yam plantation as we

came along, and what we did not use we destroyed, but on this journey we have not even taken cocoanuts sufficient to assuage our thirst." They went to Mekeo and returned home, and I believe had not a single difficulty in the whole journey, and did not commit any robbery. Such is the effect of mission work amongst them, although they are by no means Christians.

This particular part of the tribe includes all the Motumotu villages, Moveave, Lese and Iokea, and Kart of Karama, and it is of them I now write.

I shall keep as near as possible to the printed paper sent me by the Secretary of the Anthropological Institute.

They are not hunters, only when they go east to Lese and Iokea they have a run after wallaby, and here sometimes, not often, they enjoy a day in the bush after wild pigs. They are not a pastoral people but are great agriculturists, and live chiefly on fish and vegetables.

They have no boats, but use canoes, dug out of trees felled up the river and floated down. The canoe making is all done close by the village on the river bank. They use paddles made out of one piece of wood[1] and paddle the canoe sitting as a rule. The large canoe used for fighting, and called by them Lakia, was paddled by all standing. The canoes were lashed about 6 feet apart and the bridge in the centre was a platform on which the fighting men stood with a large supply of bows and arrows fastened to the railing.

In hunting pigs they use spears, nets (Plate 153, No. 2), and bow and arrows.

The dog is of great use in hunting wild pig, but more especially to kill when friends arrive, and the eye teeth are of very great value.

The bow and arrow are chiefly used in fighting, sometimes in fishing and hunting the wild pig. The bows are not made here, they come from Namau, the district round Bald Head and Cape Blackwood, 100 miles or so to the north-west.

In fishing, nets[3] are chiefly used, also bow and arrow, and occasionally a tortoise-shell fish-hook. In fishing with bow and arrow, a piece of mangrove, with part of roots left, is secured and stuck in the sand roots uppermost, for fishermen to stand on just inside a breaker, and as the fish come in on the breakers they are shot at, and it is astonishing the number caught in this way.

[1] "Ethnographic Album of the Pacific Islands," by Edge-Partington and Heape, 2nd series, Plate 202, No. 2.
[2] *Ibid.*, 2nd series, Plate 153, No. 1.
[3] *Ibid.*, 2nd series, Plate 169 No 1.

They use no javelins, but some of the arrows have very loose heads so that they may be left in the body.

Nearly all their cooking is done in pots bought with sago from the Motu tribe; sometimes the sago is damped and enveloped in long leaves, those of the Nipa palm, and cooked on the ashes, and often inside these roly poly sago sticks they put fish and shellfish. I have never seen fruit. The sago is cooked in many ways, as porridge with shellfish mixed with it, or leaves from a bush that grows in the plantations, or grated cocoanut; or sometimes as dumplings mixed with grated cocoanut, or cake made by damping the sago, spreading out thin and placing it on a broken piece of Motu pottery. The whole is very much the same as Scotch oatcake is prepared.

A dish much relished is ripe banana and sago boiled together, and when cooked and poured into dishes, the milk from the grated cocoanut poured over it. They also cook taro, yams, and sweet potatoes and sago together. Sometimes food is roasted and turned with tongs.[1]

The women are very careful to wash their hands before attending to cooking, and no woman with menses or near confinement and for long after can cook food. I am not aware of any particular observance by the women before cooking.

The women cook the food and dish it, and place it before the men, when all males will first eat and then all females.

Fire is produced by rubbing as in the islands of the Pacific.[2] It is very seldom allowed to go out. Long, long ago there was no fire, and food was eaten raw until a man Iriarai brought it out of the earth where he was sitting. Everybody was frightened and most ran away, but some said, "Let us keep it now we have got it," and they were only able to do so by rubbing a stick with another.

Houses are built on posts fixed in the ground. From ground to floor of house about 7 feet. House about 30 feet long and 16 broad, high in front, tapering to end and rounded on top.

Mothers and girls sleep together, fathers take boys with them to the *eubo* (*dubu* or temple); very little boys sleep in house with mother, sometimes *all* sleep in house. All young men after a certain feast have their heads shaved, enter the *eubo* and adopt the *si*, a long strip of bark cloth (specimen sent), and remain until their hair has grow long and piggy. During all that time they are not supposed to look on a woman, and are only allowed to go out in the dark.

There is no furniture in their houses except cooking pots

[1] "Album," 2nd series, Plate 194, No. 8.
[2] *Ibid.*, 2nd series, Plate 174, No. 6.

dishes, fishing nets, and baskets, with odds and ends tied up in them, and a wooden pillow or two.

The villages are laid out in streets, but in no order. Here and at Moveave they are in a circle.

The only plants used for manufacture are bananas, jute, and several bushes, from which a strong fibre is obtained. All these fibres are used in making twine for bags and nets.

Taro, yam, sweet potato, sugar cane, sweet yam, bananas, sago, cocoanut, breadfruit, roseapple mango are all used for food.

Savod, or mulberry, is grown to make *si* that men wear.

The only implement used in agriculture is a long hard stick about 5 feet in length.

Religion and Customs.

They have no real idols, are all mere fetishes or charms. *Semese* or *Lalakare* are worn to keep off evil spirits.

Tipare.[1]—Roaring bull, only seen by men after manhood, and then pigs and much food have to be provided. When the day comes for the feast and the introduction, the roaring bull may be heard from two in the morning and on until sunset. The day before, all females and young people have left the village lest they should hear it and die. I had difficulty in getting one.

Oioi.—Is a mask[2] worn by some men whose duty it is to look after the taboo. They run and dance through a village carrying a short stick of hard wood, and frighten women and children. These masks are kept in the bush. They are made of native cloth stretched on a wicker frame.[3] The cloth is whitened with lime and the face is painted various colours. It comes on to the shoulder whence hangs a long fringe of grass, the same as petticoats are made of, to the waist, and from there to the knees a kilt of the same.

The *Oioi* is the most important, and feasts are prepared for it.

They have nothing they worship that I am aware of, and I know of nothing they make offerings to, unless the sorcerer, who receives armshells, pigs, pearl shell, and food of various kinds.

The people are very superstitious on nearly everything, but are wonderfully free of fear, going about at night without lights or even clubs or any other weapon.

For fuller answers to questions I would refer to notes taken

[1] "Album," 2nd series, Plate 201, No. 1.

[2] *Ibid.*, 2nd series, Plate 186.

[3] *Ibid.*, 1st series, Plate 330, No. 1, and "The Decorative Art of British New Guinea," by A. C. Haddon Cunningham. "Memoirs," x, 189, Plate.

by me seven years ago from an old man since dead, and who I am told now was the only one who knew anything of the past.

They do not cast lots nor have they any poison ordeal. They are not cannibals and never were, detesting it with a great detestation, so much so that some lads I took with me lately to Namau, a cannibal district, would eat no food cooked by others lest it should have been cooked in a pot in which human flesh was cooked.

For funeral rites I would refer to the notes already spoken of. They believe in a future state. After death the spirit hovers about for some time until certain feasts are over, when it departs to the west, with an abundance of food and areca nuts. The canoe containing these is taken to the river at mid-day and left until after sunset. At burial all things of value belonging to the dead are buried, but after an interval taken away, when a feast is prepared and a banana stump is decorated with them, and friends gather round to eat and sympathise.

At death the body is dressed in all the finery and made to sit up until the evening, when it is put in the grave and covered over with a plank.

Some things are placed by the grave, a man's bow with string cut and some broken arrows, and his net bag containing a broken spoon, a few areca nuts, betel peppers, and broken lime calabash, and an earthen dish, broken. The dish is one last used by him. Beside a woman's grave may be seen broken cooking dishes and pots. All carry hair of dead round their necks in knitted bag.[1] Widows wear dress, *Keukai*.[2] The time of mourning is long continued, and widows and widowers sleep many months by the grave. The first widow's mourning—deep mourning—is to besmear herself with the river mud and go naked.

Arts and Manufactures.

The New Guineans do not spin or weave. The dyes they use are *Naiara* and *Quavi*.

The dark brown dye is procured by steeping the article in the mud for some time. The *Quavi* is scraped and a little water added, when the article to be dyed is placed in it and left.

The *Naiara*, leaves and seeds are put in a pot with water and the article to be dyed, placed on a fire and boiled for several hours.

They have no knowledge of glass. They have as musical

[1] "Album," 2nd series, Plate 103, No. 6.
[2] *Ibid.*, Plate 177, No. 2.

instruments the drum, *Aopa*[1] used in dances, *Meho*[2] flute. Blown at side of mouth. *Teto*,[3] gong beaten at sea.

They have no knowledge of pottery here, all they use they buy from the Motu tribe about Port Moresby.

Only recently have they used tobacco. From ancient times they have chewed the areca nut and betel pepper with lime.

For smoking they use bamboo pipes, *Kika*.[4] They use no snuff and have no ceremonies in connection with tobacco smoking.

They have no trade whatever in salt, wine or beer, or spirits.

Their knowledge of medicines is very small. For nearly all sickness they use ginger, and certain leaves they burn and rub the body with or steep in hot water and bathe the body. The sorcerer is supposed to be the great man to appeal to.

Their surgical instruments are pieces of shell or flint, obtained from further east, and small bow and arrows *Siro apo*.[5]

They know nothing about the metals, all iron implements having been introduced. They have no knowledge of precious stones, gold or silver.

Personal Ornaments.

They have no special marks of tattooing cicatrices. Some natives who have been to the Motu tribe get tattooed on breast, but it is not the rule. The tattooing is chiefly done on women, but they being darker than the Motuans, it is scarcely seen.

The teeth are not knocked out but the eyebrows are shaven and the eyelids are painted black or red with the finger, burnt cocoanut husk being used. *Mori* and *Fatia*.

Ear ornaments are worn by both sexes, but the finer ones by the men.

Women use chiefly *Uakou* and *Bureke*: and *Forova* worn by men. In infancy the ears and nose are pierced. The ornaments are worn as pendants, others inserted in lobe.

They have nose ornaments made from shell and coral, obtained at Port Moresby, but they have no lip ornaments.

The hair in lads about fifteen to eighteen is cut close except a small tuft in front: in children the hair is cut in sections all over the head. Married women shave the head. Young women or grown girls glory in a quantity of hair. They do not dye the hair in any way.

Fufusi.—Lads up to eighteen or nineteen wear a sperran of fibre and at that age enter the *erabo* and adopt the *Si*.

[1] "Album," 2nd series, Plate 167, No. 2.
[2] *Ibid.*, Plate 197, No. 3.
[3] *Ibid.*, Plate 197, No. 1.
[4] *Cf.* Plate 318, No. 4, 1st series.
[5] "Album," 2nd series, Plate 188, No. 3.

Girls and women wear petticoats, *Mate*,[1] made from young frond of sago palm. Unmarried women when dressed wear large petticoats, but when at work wear small ones the same as married women—often these small ones are only front coverings having no back. Sometimes they use only a green leaf, often that is used with petticoat and signifies menses.

They carry shields in fighting, *Naua*,[2] and on the arm from wrist to near elbow and armlet made of cane, *Moka*.[3] The *Naua* is hung on shoulder.

They use bows and arrows and clubs bought in Mekeo and Poti,[4] and spears, *Haora*.[5]

They have a short stick, *Huca*,[6] which in quarrels they throw at one another, chiefly carried and used by young men. It is very seldom a young man is seen without one.

They know nothing of carving here. They have no money, and give in exchange for arm shells, pearl shell, shell necklaces, etc., sago and canoes.

I have not yet been able to get any correct information as to their knowledge of the stars and constellations.

For their games I refer to my notes taken long ago and published in "Pioneering in New Guinea."

I know of no ancient stone implements.

They have many ornaments used in dancing (see list of things sent), and many feather headdresses I have not procured.

I know of no property mark. They used wooden pillows, *Iori*, but more frequently do without.

Ethnological Questions.

They live in families but have no distinctive names; except names given to children at birth, and which belong to their own families. Persons of the same name may marry and here even cousins may marry, but not brother and sister.

At certain times there are certain foods forbidden. Youths in *eraho* can only eat bananas and sago, some kinds of fish, and pork. Certain foods lead to obesity and no muscle-strength. A man going to make a new plantation circumscribes his food as he does also if going on a long journey. Mourners can only eat certain foods.

Before setting out on a hunting, fishing, or war expedition, must have nothing to do with women, only eat certain foods and

[1] "Album," 2nd series, Plate 188, No. 5.
[2] *Cf. ibid.*, 1st series, Plate 282, Nos. 1–2, Plate 283, No. 3
[3] Same type as Plate 313, No. 10, 1st series.
[4] 2nd series, Plate 189, No. 1.
[5] "Album," 1st series, Plate 270, No. 1.
[6] *Ibid.*, Plate 193, No. 7.

sparingly. The old men stay at home and look after the *crabos*, but must on no account go near their wives during the absence of the others, and must not eat forbidden food, lest the expedition should fail. In hunting, fishing, fighting, and long journeys, no particular words are used, but appeals are constantly made to the spirits of fathers and mothers long since dead, to prosper and to keep them. Those left at home on these occasions must not let the fire go out, nor must they have any sexual intercourse, and those left in *crabo* must touch nothing belonging to others, nor eat forbidden food and not much of that allowed.

A man who has killed another must not go near his wife, must not touch food with his fingers, but is fed by others and only with certain foods, and this continues until new moon.

If any of the foregoing should be omitted, bad luck would surely follow. Generally any disaster is put down to the breach of one or other of these things, having been with wife or other woman or having eaten of forbidden food.

When going hunting, fishing, or planting, or fighting, people who meet them get out of the way and say nothing, lest bad luck should attend the expedition.

They have no particular observances at cutting down trees except when a very large tree is to be cut down for a large trading canoe, and then the owner of the tree will not go near his wife or any other woman for some time before and will only eat sago.

Nothing is done at housebuilding, but when an *crabo* is to be built, the chief men are sacred for some time. When finished a fighting expedition is planned and life is taken. On the return of the expedition, if successful, all fire arrows into the peak of the *crabo* with great shouting.

The owner of land to be cleared for cultivation abstains from all sexual intercourse, eats sparingly, and talks little. Before planting, a present of arm-shell, or pearl-shell, or pig, is brought to the sorcerer, who prays for the plantation. When harvest comes he gets the best and then the *crabo*, the remainder kept for family use.

Before eating any food from a new plantation they will have a feast of the food ready and brought from the ground, when sorcerer, *crabo*, and all friends join, then the family can "carry on."

In times of severe drought the sorcerer is appealed to, who, if well paid, will make rain: he also can stop it. He also causes heavy seas so that canoes are not able to get out, but, if paid, will give calm by speaking to the spirit in his bone calabash and squirting his saliva all about. To cause heavy seas he

seizes his foot by the big toe, speaks to it, and then with a jerk stretches it out.

Land is held by sons and daughters alike. See my notes.

The taboo, or *safu*, is imposed by all the *crabes*. A chief man, whose wife has died, asks for a *safu*, and at once it is granted; or a chief dying and a *safu* is proclaimed. It is only over the cocoanuts. It is made known by fastening on sticks at end of villages, leaves of the sago palm, also the same all over the cocoanut groves, and by also fastening cocoanut leaves to cocoanut trees. Any one breaking a taboo is beaten, and if it should be a great taboo when the *eivi* is about, these spirits (masked men) can even take life for breaking the taboo. Sickness and death sometimes follow the breach of taboo. In the event of breaking taboo and sickness follows, a present is brought to the cause of the taboo, the sin confessed and the sick one recovers.

In May they have their harvest feasts and dances, when young and old join. One day then is set apart for children, when all who can toddle join, dressed in all the finery the parents can command.

Between September and October men about to adopt the belt, *itari*, do so at a large feast in which all join. They have no period of general licence as at Namau.

In times of great sickness they expel the evil spirits of sickness from the village with drum beating, conch-shell blowing, stick beating, fire-stick throwing, and terrific shouting. When mosquitos are bad, certain men dress up in leaves and feathers, and march through village and round it, beating drums and shouting to drive the mosquitos away. At no time have they any general atonement or purification of the village.

They have no formal extinction of fire. Fire is only extinguished on a death taking place in the house.

Their only guardian spirits are those of father and mother, and to these they appeal in distress or want by land or sea.

Chiefs have not necessarily supernatural powers, but a sorcerer is looked upon as a chief. A man here, Hiovaki, is a chief because he has power over the sea and gives calm or storm. Another, Pitiharo, is great because his power is for plantations, and is able to give an abundance of all kinds of food, and can bring rain or sunshine. Here they are not put to death if they fail.

The sorcerer, Pitiharo, eats no big fish, only small ones, and never pig. He sometimes fasts, and then he will not eat taro or yam.

Anthropometrical Observations *on some* Natives *of the* Papuan Gulf. By the Rev. Dr. James Chalmers.

Some few years ago the Rev. James Chalmers, the well-known pioneer missionary of British New Guinea, made some measurements on several tribes of the Papuan Gulf. These passed through the hands of Dr. Garson, who reduced the measurements from the original English system to the metric system. Later they were handed over to Dr. A. C. Haddon who has determined the indices and forwarded them for publication in their present form.

The tables are arranged in geographical order, proceeding from the west to the east. Samari and Saguane are villages in Ipisia. This is the native name for the southern portion of the large island of Kiwai, which is situated at the mouth of the Fly river. Maipua is a coast village on the Papuan Gulf (long. 145° 10′ E.), Orokolo another (long. 145° 20′ E.), and Toaripi (or Motumotu) a third (long. 146° 10′ E.). The latter is a well-known village on the eastern side of the Gulf. Jokea (long. 146° 16′ E.) lies about 15 miles S.S.E. from Toaripi. Chalmers says, "The natives are one with the Toaripians."

For the sake of convenient comparison, the arithmetical means of the measurements and indices taken at each locality are placed together at the end of the tables, and a seriation of the cephalic indices is also given.

The data are not sufficiently numerous to justify any general conclusions being drawn, but the following tentative results may be pointed out:—

The span is, with but a single exception, greater than the height, the mean difference being 64 mm., or $2\frac{1}{2}$ inches, the maximum difference being 144 mm., or nearly $5\frac{3}{4}$ inches.

There is an unexpected prevalence of brachycephaly, especially at Kiwai, where fourteen out of the nineteen measured have an index of 82 or over, the greatest index being 92. At Maipua the people are extremely dolichocephalic and at the same time of short stature (1636 mm., 5 feet $4\frac{1}{2}$ inches). The Orokolo and Toaripi people are evidently allied.

The following is a possible explanation of the facts: the short dolichocephalic Western Papuans extend all along the coast of the Papuan Gulf, and, according to the measurements,

occur in their purity at Maipua. They have been crossed at Orokolo and Toaripi with a brachycephalic people, and apparently the two peoples have amalgamated fairly thoroughly, but this has not yet occurred at Kiwai, so that there is a preponderance of brachycephals.

No correction has been made to reduce the breadth length index of the heads of living men to that of the skulls.

	Age.	Height.				Head.				Nose.		
		Stand.	Sitting.	Span.	Cubit.	Length.	Breadth.	Index.	Cheek-bones.	Length.	Breadth.	Index.
SAMARI—												
Marpua	23	1721	813	1829	482	174	149	85·6	133	51	25	49
Dagi	22	1645	816	1756	466	174	149	85·6	136	51	25	49
Gagoa	30	1654	797	1797	463	174	119	85·6	129	51	28	54·9
Samera	34	1601	800	1711	444	165	152	92·1	136	51	28	54·9
SAGUANE—												
Narea	45	1721	854	1804	491	171	143	83 6	130	51	22	43·1
Nadere	55	1648	800	1772	463	180	149	82·7	140	47	25	53·1
Saraua	24	1660	794	1791	457	178	140	78·6	136	51	27	52·9
Ramena	57	1651	826	1734	463	180	140	77·7	132	44	27	61·3
Naruge	27	1629	844	1734	444	181	136	75·1	133	44	22	50
Manahu	45	1724	829	1824	495	178	146	82	140	54	27	50
Amea	23	1613	810	1680	457	171	143	83·6	130	51	19	37·2
Maria	32	1677	851	1680	454	174	152	87·8	135	57	25	43·8
Eabi..	36	1677	822	1747	463	181	143	79	130	47	22	46·8
Susua	40	1699	844	1817	491	178	149	83·7	140	64	28	43·8
IPISIA—												
Naragi	45	1731	829	1861	498	181	149	82·3	135	54	22	40·7
Musu	30	1604	813	1753	470	176	146	82·9	133	51	22	43·1
Naoi..	30	1581	844	1690	451	174	143	82·2	130	51	25	49
Karimi	30	1654	819	1781	485	184	143	77·7	133	51	25	49
Manao	20	1581	804	1690	457	165	140	84·8	127	47	25	53·2
		1656 = 5′ 5¼″	821	1761	468	176	145	83	133	51	25	48·7

MAIPUA.

	Age.	Height.				Head.				Nose.		
		Stand.	Sitting.	Span.	Cubit.	Length.	Breadth.	Index.	Cheek-bones.	Length.	Breadth	Index.
Ipai	40	—	—	—	—	197	136	69	132	54	28	51·8
Ivaha	36	—	—	—	—	200	138	69	138	60	31	51·6
Evara	55	—	—	—	—	190	133	70	129	57	25	43·8
Keaia	40	1601	804	—	432	190	136	71·5	136	51	25	49
Kaiva	48	1680	804	—	438	190	133	70	133	57	28	49·1
Amuru	40	1626	813	—	457	190	136	71·5	140	51	28	54·9
		1636 = 5′ 4½″	807	—	442	193	135	70	135	55	27·5	50

OROKOLO.

	Age.	Height.				Head.				Nose.		
		Stand.	Sitting.	Span.	Cubit.	Length.	Breadth	Index.	Cheek-bones.	Length.	Breadth.	Index.
Kiki	25	1651	838	1728	444	181	136	75·1	136	57	28	49·1
Hoea	35	1613	819	1677	448	181	140	77·3	140	57	28	49·1
Uriari	40	1708	867	1784	435	196	140	71·4	133	57	28	49·1
Aiari	40	1584	835	1728	419	184	146	79·3	140	51	25	49
Iaravaki	35	1728	864	1823	482	193	143	74·1	133	54	25	46·3
Rape	20	1575	750	1613	419	178	140	78·6	130	51	22	43·1
Apove	55	1766	870	1880	476	181	140	77·3	135	51	28	54·9
Kearu	40	1670	813	1807	482	184	143	77·7	130	51	25	49
Merarike	25	1715	840	1820	479	187	140	74·8	127	44	25	56·8
Kauri	55	1690	867	1823	482	187	143	76·5	130	47	19	40·4
Hare	30	1693	873	1689	457	180	140	77·7	137	44	25	56·8
Melore	26	1728	867	1594	473	181	140	77·3	133	47	28	59·5
Mahiro	35	1725	886	1778	479	190	143	75·2	130	51	25	49
Harova	26	1772	873	1845	491	184	140	76·1	132	54	25	46·3
Hipai	28	1670	714	1687	473	178	133	74·7	127	51	19	37·2
Fope	60	1588	810	1665	438	181	140	77·3	127	51	22	43·1
Rihaora	65	1636	851	1677	454	190	146	76·8	130	54	28	51·8
		1677 = 5′ 6″	836	1741	461	184·5	141	76·3	132	51	25	49

TOARIPI (MOTUMOTU).

	Age.	Height.				Head.				Nose.		
		Stand.	Sitting.	Span.	Cubit.	Length.	Breadth.	Index.	Cheek-bones.	Length.	Breadth.	Index.
Pukari..	70	1774	877	1912	501	200	146	73	135	64	9	14
Rausi	60	1683	877	1708	482	190	149	78·4	140	64	13	20·1
Semese	65	1740	870	1855	—	193	152	78·5	146	64	28	43·8
Vita	32	1657	857	1664	444	193	151	78·2	143	61	31	50·8
Lahari..	42	1700	877	1740	470	181	146	80·6	143	57	31	54·4
Sivio	16	1524	781	1581	432	180	146	81·1	132	64	13	20·1
Fareo	24	1721	877	1651	463	190	146	76·8	138	70	19	27·1
Hari (Joken)	18	1645	800	1756	476	187	146	78	133	54	13	24·3
Sarea (Joken) ..	20	1677	832	1831	488	184	146	79·3	130	57	25	43·8
Hauramiri	36	1831	978	1931	521	200	149	74·5	140	76	38	50
Susume	50	1794	918	1918	527	200	143	71·5	144	57	28	49·1
Kaipu	36	1744	851	1880	495	184	149	81	133	57	28	49·1
Posu	34	1744	886	1817	488	190	152	80	143	57	27	47·4
Havari..	30	1721	838	1804	441	180	143	79·4	133	51	25	49
Hiovake	18	1610	819	1762	460	184	146	79·3	133	54	25	46·3
Siare	18	1664	857	1759	457	178	140	78·6	127	51	28	54·9
		1702 = 5′ 7″	843	1782	476	186	147	77·7	137	60	24	44

	Height.					Head.				Nose.		
	′ ″	Stand.	Sitting.	Span.	Cubit.	Length.	Breadth.	Index.	Cheek-bones.	Length.	Breadth.	Index.
Kiwai	5 5½	1656	821	1761	468	176	145	83	133	51	25	49
Maipua	5 4½	1636	807	—	442	193	135	70	135	55	27·5	50
Oroko'o	5 6	1677	836	1741	461	184	141	76·5	132	51	25	49
Touripi	5 7	1702	843	1782	476	186	147	77·7	137	60	24	44

SERIATION OF CEPHALIC INDICES OF FIFTY-EIGHT NATIVES OF THE PAPUAN GULF.

	Kiwai.	Maipua.	Orokolo.	Toaripi.
69	—	2	—	—
70	—	2	—	—
71	—	1	1	1
72	—	1	—	—
73	—	—	—	1
74	—	—	1	1
75	1	—	4	—
76	—	—	2	—
77	—	—	5	1
78	2	—	2	4
79	2	—	2	4
80	—	—	—	1
81	—	—	—	3
82	3	—	—	—
83	3	—	—	—
84	2	—	—	—
85	1	—	—	—
86	3	—	—	—
87	—	—	—	—
88	1	—	—	—
89	—	—	—	—
90	—	—	—	—
91	—	—	—	—
92	1	—	—	—
Arithmetical Mean	83	70	76·5	77·7

QUINARY SERIATION OF CEPHALIC INDICES OF FIFTY-EIGHT NATIVES OF THE PAPUAN GULF.

Cephalic Index.	Maipua.	Orokolo.	Toaripi.	Kiwai.	
65–69	2	—	—	—	2
70–74	4	2	3	—	9
75–79	—	15	9	5	29
80–84	—	—	4	8	12
85–89	—	—	—	5	5
90–94	—	—	—	1	1
Total	6	17	16	19	58

ANTHROPOLOGICAL MISCELLANEA AND NEW BOOKS.

Readers of the Journal are invited to communicate any new facts of especial interest which come under their notice. Short abstracts of, or extracts from letters, will be published at the discretion of the Editor. Letters should be marked "Miscellanea" and addressed to The Secretary, 3, Hanover Square, W.

Notes on the Chatham Islands.

The following communication has been received from Mr. J. W. Williams of Waitangi West, Chatham Islands, who has during the past year devoted himself to the investigation of the existing memorials of the Moriori race. The search has been an arduous one, and if it has been less productive than had been hoped, the results have not been devoid of permanent interest. Mr. Williams deserves all praise for the energy and perseverance with which he has prosecuted his enquiries under circumstances which were frequently of a rather discouraging nature. It will be seen from the following short summary of his work that the last of the Morioris will soon have disappeared from their ancient home, leaving hardly any traces of their occupation behind them. From an ethnographical point of view the Chatham Islands may now be considered as a field which has been not only reaped but gleaned. Mr. Williams is of the opinion that most of the existing implements and weapons have already been removed from the islands, and that future explorers will come away almost empty-handed. Mr. C. H. Read, to whom the following notes were originally sent, has kindly authorised their publication in the "Journal."

"*Waitangi West*,
"*Chatham Islands*,
"4 *Feb.*, 1897.

"A few weeks ago I rode from Waitangi West on the northern shore of Chatham Island to the *Pah* at *Manukau*, the south-eastern point, a distance of forty miles, in order to see *Tapu*, the oldest of the few true Morioris now living. The others are *Wihoeta* living at *Manukau*, *Rawpia* at *Matarakau*, *Horimana*, his wife and son living at *Manukau*, *Hapruna* at *Manukau Kirapu* at *Wairua*. *Manukau pah* is pleasantly situated on a slope facing the sea and about a hundred yards from the shore. The land is a Moriori

reserve, that is to say, land set apart for the sole use of the Morioris, and is of exceptional quality. To the southward the beach is backed by high cliffs the façade of which consists of clusters of basaltic columns extending in a westerly direction for nearly a quarter of a mile.

"I found *Tapu* and his wife living in a small *whare* (hut) built of *Punga* (fern tree) and thatched with *Toi toi* grass tied to the rafters with flax. Nicely woven flax mats covered the floor.

"The welcome I received was cordial though gentle and courteous, contrasting strongly with the boisterous and demonstrative greetings of the Maoris.

"Though now somewhat bent with age, being over seventy, *Tapu* is nevertheless a fine specimen of the true Moriori. In stature a few years ago he was 5 feet 9 inches. He possesses an intelligent face, with an expression of candour stamped upon every lineament. The forehead is high, the nose long and faintly aquiline; the eyes large and wonderfully expressive. He spoke in the Maori language, and in the course of his conversation with me, I could not fail to remark the tendency to soften the sound of *ng* in such words as *ngaru* (wave) *ngoikore* (weak) *ngingio* (shrivelled). The peculiar nasal sound represented by *ng* is strongly marked when uttered by a Maori, but amongst other Pacific Islanders this sound is not used. As a matter of fact, if the sound of *ng* as used by the Maoris be exchanged for the simple sound of *n* and *l*, substituted for the *r* in Maori words, the main difference between the Maori language and that spoken by the Kanakas is at once removed.

"Naturally my first questions to *Tapu* were to ascertain if the Morioris now living possessed any reliable tradition as to their origin. Traditions they have in abundance, but they are of too romantic a character to serve any useful purpose. The general belief among them is that they came originally from Hawaiki to New Zealand and from thence to the Chatham Islands. That these islands have been inhabited for hundreds of years is at least highly probable, though it is difficult to say by whom. As regards the daily occupation of the Morioris, most of their time seems to have been utilized in procuring food, making garments and sleeping mats and shaping stone implements. In this last-mentioned industry they show that they possessed considerable ingenuity. Fish hooks and fish spears or gaffs were also constantly required, and these articles were cleverly shaped cut of bone. Pendants and other ornaments termed *Rais* for fastening the flax mats worn as garments were also manufactured of bone. The privilege of wearing such ornaments however was confined to chiefs.

"The dwellings were the ordinary *Wharepune* or A-shaped huts, constructed of fern tree and thatched with *toi toi* grass, often sufficiently large to accommodate twenty or thirty people. Some of them were ornamented with rude carvings, but as all the *whares* in which the Morioris formerly dwelt, with the exception of a few, have been demolished by the Maoris or have succumbed

to the effects of time, no specimens of their art are now obtainable. Most of the settlements were situated close to the sea shore, one of the principal having been at *Operau*, a sheltered bay in the *Te Raki* district. It was no doubt selected owing to its proximity to the Western Reef from whence seals were and in fact still are obtainable, though not so numerous now as formerly. From *Operau*, voyages were also made to *Rangitutahi*, three precipitous rocks, seventeen miles to the northward of the Main Island, abounding in albatross. Every year the Maoris still go there to procure a supply of these birds, which they send to *Te Whiti* at *Parihaka* in New Zealand. All the Chatham Island Maoris are followers of the so-called prophet. Operau is also noteworthy as being the recognized leaping place of the departed souls on their way back to Hawaiki. This belief was general among the Morioris. Cape Reinga, the north-western point of the North Island of New Zealand, was a spot held sacred for a similar reason. The word *Reinga* literally means a leaping place. The superstition attaching to Operau was strengthened by the fact that a low range of hills from the interior of the island terminates in this bay in a gradual slope towards the sea, and at the foot of the slope stands an ancient *Ake-Ake* tree. A root of this tree extends to the rocks below in which there is a blow-hole. The wash of the surf against the funnel-shaped opening in the rock causes the air thus compressed to escape from a small opening in the top in a series of plaintive sighs, almost human in quality of sound.

"The Morioris had a confused notion of good and evil spirits, and the aid of numerous deities was always invoked prior to any undertaking of importance. The supposed dwelling place of a beneficent deity was indicated by a rude carving on the bark of a *Kopi* tree, and according to the nature of the enterprise in hand the abodes of the spirits protecting such ventures, were sought out and venerated. I had observed many of these curious marks on the *Kopi* trees in the bush at *Waitama* at the southern end of the *Te Whanga* lagoon, which covers one quarter of the entire island, and was somewhat puzzled as to their significance.

"Prior to the arrival of the Maoris my informant states cannibalism was unknown, and I am quite prepared to believe it, seeing that food was plentiful. They are stated to have lived peaceably along the coasts, spending their time chiefly in procuring supplies of fish, fern root, *Kopi* nuts, mushroom, *Nikau* palm, *Momaku* (an edible fern tree) wild duck and *Pukeko* (a large swamp bird). Periodically they put off in rafts constructed of log and kelp, or sometimes in large canoes, to the Western Reef for seals or to *Rangitutahi* for albatross.

"While waiting for a favourable wind in their harbour at Operau the time was occupied in the manufacture of stone implements such as axes, adzes, chisels, blubber knives and smaller carving tools. With the large stone axes, tree-felling was no difficult matter. Specimens of these stone implements have been forwarded to the British Museum."

Collection of Photographs and Lantern Slides.

The progress of the collection has not been very rapid, but a certain number of photos, negatives and slides have been received and registered. The principal donor of both categories has been Lieut. Boyle T. Somerville, R.N., who has presented a most interesting series illustrating the New Hebrides and the Solomon Islands, especially New Georgia, on the inhabitants of which island he communicated a valuable paper to the Journal last year. Surgeon Frederick W. Collingwood, R.N., has sent photos from the Ellice Islands; and H.H. the Ranee of Sarawak has also presented photos of Dyaks of Borneo.

A certain number of the older photographs formerly in the possession of the Institute have been catalogued and mounted: but it is difficult to make continuous progress with this work without outside aid.

Among the series thus treated may be mentioned one illustrating the Swazis and Swaziland, and the collection of beautiful photos of the Indians of Guiana made by Mr. Everard Im Thurn.

The Institute has also purchased a few slides, amongst which a set of eight, illustrating the making of an adze, from photos taken by Mr. M. V. Portman, in the Andaman Islands, are especially worthy of notice. Further presentations, especially of slides, will always be gladly received.

Note on the Languages of North-West Australia. By Sidney H. Ray, with Aboriginal Vocabularies collected by E. Betham Rigby.

I *Introductory, by* Sidney H. Ray.

For the purposes of comparative philology the languages of the native tribes of North-Western Australia should prove to be of considerable interest. In that direction the island continent most closely approaches the Malayan region, Cape Londonderry, the nearest point, being only about 330 miles distant from the island of Timor, or less than half the distance which separates North-Eastern Australia from the Melanesian island of New Caledonia, or the south-eastern parts of the island from Polynesian New Zealand.

Almost the whole of our scanty knowledge of the tribes and languages of the north-west relates to those of the region around Port Essington and Port Darwin, where settlements were made as early as 1831 and 1869. Between the latter place (12° 27′ S. lat., 130° 50′ E. long.) and the mouth of the De Grey River (20° S. lat., 119° E. long.) no information was available until the collection of the Walki, Munmulla, and Nowilnowilanna vocabularies of the present notice. These were collected by Mr. Ernest Betham Rigby at Wyndham, East Kimberley, during the years 1890–93.[1]

[1] They were sent to Professor A. C. Haddon, who has kindly permitted me to make them the subject of this notice.

Mr. Rigby gives the following notes as to the locale and relations of the tribes: "The Walki, Chualinma, or Cowrana tribe have their habitat on the Kimberley gold-fields, being bounded by the desert on the south, the Margaret River on the west, the Yamandil tribe (near the boundary of Western Australia) on the east, and the Ord River (where it crosses the Wyndham road) on the north, there touching the Munmulla or Curramulla tribe. The latter extends to the Denham River or a little north of it, its western boundary being the mountain range, and its eastern the Ord River. The Nowilnowilanna is a small tribe, with the same east and west boundaries, but squeezed in between the Munmulla and the Warrangarra or Coast tribe. It will, I think, soon cease to exist. The vocabularies of the three tribes thus represent the languages spoken over a region extending 250 miles north and south, and varying in width from 200 to 50 miles. The Yamandil tribe, from which I have only a few words, lies to the eastward of the other three, and are more numerous than any, with the doubtful exception of the Walki. The Munmulla seem to have been affected by a mixture of words from the eastern tribe, the Yamandil and Nowilnowilanna by the Coast dialect, but this is only conjecture, as absolutely nothing is known of the Coast dialect. The Coast tribe is called Warrangarra by the Nowilnowillana, but this may be only a form of their word meaning 'many' (*warrangarri*, five or more). They profess themselves unable to understand these Warrangarra."

Taking the whole north-western region of Australia, from the De Grey River, on the west coast, to the Roper River, on the west shore of the Gulf of Carpentaria, our knowledge of the languages may now be represented by the following table showing tribes, localities, and authorities:—

Tribe.	Locality.	Authority.
1. Ngurla.. ..	Mouth of the De Grey River.	C. Harper in Curr's "Australian Race," i, pp. 292-3.
2.	Roebuck Bay	P. Bassett-Smith, "Journ. Anthrop. Inst.," xxiii, p. 331.
3. Walki	Between Margaret River and Ord River.	Rigby MS.
4. Munmulla ..	Between Margaret River and Denham River.	Rigby MS.
5. Nowilnowilanna	North of Munmulla ..	Rigby MS.
6. Yamandil ..	East of Ord River ..	Rigby MS.
7. Larrakia ..	Port Darwin, from mouth of Adelaide River to Port Patterson.	P. Foelsche in Curr's "Australian Race," i, pp. 258, 259. Rigby MS.
8. Woolna ..	East side of Lower Adelaide River.	Vocabulary, Adelaide, 1869 (reprinted in Curr); A. J. Todd in Curr's "Australian Race," i, p. 262.

Tribe.	Locality.	Authority.
9. Woolwonga ..	Adelaide River	P. Bassett-Smith, "Journ. Anthrop. Inst.," xxiii, p. 331.
10. Oitbi or Bijnalumbo.	South coast of Van Diemen Gulf.	G. W. Earle, "Native Races of the Indian Archipelago." Appendix.
11. Iyi (?)	Popham Bay, west of Coburg Peninsula.	G. W. Earle, "Native Races of the Indian Archipelago," Appendix.
12. Limbakaraja or Yarlo.	Port Essington	G. W. Earle, "Native Races of the Indian Archipelago." Appendix; C. Pasco in Curr, i, p. 269.
13. Unalla	Raffles Bay	P. Foelsche in Curr, i, pp. 274, 275; T. B. Wilson, "Voyage round the World."
14.	West Alligator River ..	P. Bassett-Smith, "Journ. Anthrop. Inst.," xxiii, p. 331.
15. Yaako[1] or Terrutong.	Croker Island and Raffles Bay.	G. W. Earle, "Native Races," Appendix.
16. Jalakuru (?) ..	Mountnorris Bay.. ..	G. W. Earle, "Native Races," Appendix.
17.	Caledon Bay, north-west shore of Gulf of Carpentaria.	Flinders, "Voyage to Terra Australis," ii, p. 215 (reprinted in Curr, i, p. 276).
18.	Roper River, west shore of Gulf of Carpentaria	Capt. Lowre in Curr, i, p. 277.

[1] The words *oitbi*, *iyi*, *yarlo*, *yaako*, mean "no." This method of naming a tribe is common in Australia.

The languages of these tribes are known through very meagre vocabularies, the longest being that of the Woolna, contained in an anonymous pamphlet printed at Adelaide in 1869, and the Walki and Munmulla of the present notice.

With regard to the grammatical structure of the languages nothing is known. Latham in the "Remarks on the Vocabularies of the Voyage of the 'Rattlesnake'" refers to a MS. grammatical sketch of the Port Essington language by Rev. Father Anjello, and makes some extracts. One of the Roman Catholic missionaries at Port Darwin is also said to have compiled a grammar of that dialect. So far as I am aware, these books have not been printed.[1]

The pronouns of the Limbakaraja (Port Essington), taken from Anjello's MS., are thus given by Latham[2]:—

[1] There is also a small school book ("Reading Book for Far North Natives") by J. Flierl.

[2] "Remarks on the Vocabularies of the Voyage of the 'Rattlesnake'": Appendix to MacGillivray's "Voyage of the 'Rattlesnake'" (1832). These remarks were reprinted in "Opuscula," by Robert Gordon Latham, p. 229.

Sing.	*Ngapi*, I.	Plur.	*Ngari*, We.
	Noie, Thou.		*Arguri*, We two.
	Gianat, He, she, it.		*Noie*, Ye.
			Ngalmo, They (also = many).

In the first and second persons the pronouns in the other dialects appear as follows:—

	I.	You.
Ngurla	*nguanguna, ngi*	*yinda.*
Walki	*ngĭn*	*unndu.*
Munmulla	*ngĭn, ngĭnoki*	*ñingan, burrumbi.*
Nowilnowilanna ..	*ngĭn*	*ñingan.*
Larrakia	*anunga*	*aejana.*
Woolna	*tanunga, ungoingi*	*nitana, nitangi.*
Unalla	*ngadbi*	*noyi.*

Mr. Rigby has the following note on the Walki, Munmulla, and Yamandil:—"The affixes *-ira* and *-bara* are generally used in the three tribes. They are compounded into *irambiri*, which is best translated by the broken English "Come up." *Ira* is a substantival affix, and is probably akin to the Larrakia *-ura*, used to adapt foreign words, as "pussy-ura," "match-ura," etc. *Bara* is a verbal affix signifying "to do or cause."

The numerals in these languages do not go beyond two:—

	1.	2.		1.	2.
Ngurla ..	purdinal, purda.	kutera.	Woolna ..	tilingita, thidle.	toloya.
Walki	cherowi ..	kujăra.	Bijnalumbo ..	warat ..	ngargark.
Munmulla ..	cherowi ..	..	Limbakaraja ..	erat ..	ngargark.
Nowilnowilanna	cherowi, cheragun.	..	Unalla ..	yardat ..	narakark.
Larrakia ..	kulaguk ..	kalitilik.	Terrutong ..	roka ..	oryalk.

The following short vocabulary illustrates the differences of the dialects:—

	Head.	Eye.	Ear.	Hand.	Sun.	Moon.	Star.
Ngurla	milga, yulka ..	chidamŭra ..	wīning, kulka	mara ..	mapil, mopul ..	wilara ..	noko, ngoko.
Walki	tumu	molo ..	yardum ..	malla ..	banda	kanga	wârdal-wañagul.
Munmulla ..	tumu	mula ..	yardum ..	mallam ..	banda	chowranji ..	wârdal.
Nowilnowilanna..	tumu	..	yambirum ..	mallam ..	bundul	chowranji ..	wiñuwanim.
Yamandil ..	tongola ..	molu ..	karara ..	..	..	..	..
Larrakia	maluma ..	limŭra ..	banara ..	qirwara ..	lalirra	lowrua ..	mamalla.
Woolna	mŭdlo.. ..	ma	wāl	mānĕuī ..	ŭmī..	lomilyer ..	monilwer.
Bijnalumbo ..	pogal	ira	kalajah ..	adbirjalk ..	manitj	korana ..	argadba.
Popham Bay ..	iwadi	jara . ..	jalamari ..	jimilakoji ..	moye	orana	wilari.
Limbakaraja ..	wakbok ..	ira	alaijah ..	inbirjalk ..	mowan	ălı	argadba.
Unalla	ewalgal ..	yarda ..	alaijar.. ..	ambirkal ..	mowang	ali	arikatpa.
Terrutong ..	wari	dala ..	lomar.. ..	manaweyi ..	muri	orana	ularit.
Mountnorris B..	ailbawal ..	ira	alajah.. ..	adbiljalk ..	mowan	orana	aramut.
Caledon B. ..	..	mēl.. ..	ponduru ..	gong ..	larange, karange ..	kuligia ..	pirni.
Roper River ..	mangerañu ..	marqil ..	gowonda ..	..	gonara	tamaranga ..	kamaringi.
West Australia ..	kăta .. .	mel.. ..	tonka, jija ..	măra ..	nganga, bătа, jāt ..	miki, mimak ..	ngangar.

In the vocabularies the vowels are pronounced as in German, the consonants as in English: *ñ* as *ni* in "onion," *ch* as in "church" (written *tch* by Mr. Rigby), *ow* as in "how," *au* as in "fault," *å* as *a* in "was"; *n̄g* is not nasal.

II. *Vocabulary of Three East Kimberley Dialects, by* E. B. Rigby.

English.	*Walki.*	*Munmulla.*	*Nowilnowilanna.*
Afraid ..	chĭlbĭlbum	chĭlbĭm.	
All right ..	oraña	oraĭă wĭĭră	oraña, nachi (*lit. good*).
Alligator ..	kĭwådi	chrĭwåji	chrĭwåji.
Along ..	yakĭngŭm - tărĭngărri	yakĭngŭmbi-iran, năriă iran.	
Angry ..	wĭŭm	wĭĭmbi, wårrĭwĭn (*bitter*).	
Another ..	pangari, cujarra-pangari.	pangari, ngalgolin ..	pangari.
Arm	anguga	angoka, angugu ..	anunga.
Back ..	tĕrlum	tĕrlam	terlum.
Bad	jĭgĭl.ĭm	jĭgĭllĭmbi-ira, yålgurĭn	
Bandicoot ..	kunanjil	.. ..	pukapuka.
Beard ..	towarum	towarŭm, cajillam (*jaw*).	towarum.
Bee	wåñăgi	wañăgor, kĕria ..	wañagi.
Before ..	koboa	kaba-irau - bĭrabĭnda, wallŏnijĕrri (*first time*).	
Belly ..	cham	cham	cham.
Belong ..	yărĭăngomĕri ..	yărĭăngomĕri ..	
Below ..	illĭgin	yĕllĭgi, ngĭrĭborun ..	
Big	nowara	nowara	bandilla-moriñan.
Bite	criambiri	oriambadi, ngirimim	
Black ..	jĭlŭm	jelŭm	jelŭm, jĭgălŭm.
Blood ..	giowla	giowla, dowlu ..	cŏllŏngul.
Bone ..	kujĭl	kujĭnĭ.	
Boomerang ..	kărrăbri	kărrăbri	kărrăbri.
Boy	wåñăki	wårăki	yarrabinbi.
Break ..	tubad-jarra	tumtără, traji ..	dibjennĭăn.
Breast ..	.. ..	mangăm.	
Breath ..	pumărĭărĭă	pumărĭăra, yarrun.	
Brother ..	yowărŭm	ngaji.	
Burn ..	bobiunarunji	bobiarun, bobobiañgari.	
Bury ..	thura-gwĭamtĕri ..	boloi, thura-gwĭamtĕri.	
Call	marrabarrim	powpowera-burra, marrabarrim.	
Carry ..	wandagbamberi ..	wandagbamberi.	
Centipede ..	trinji	trinji, pirkulag.	
Child ..	wåñaki	wåñaki	yarrabinbi.
Claw ..	yandara	yandara.	
Clean ..	burlam	ngărălam-ira, ngărălin	tarră lălŭm.

English.	*Walki.*	*Munmulla.*	*Nowilnowilanna.*
Climb ..	purtek-yarra	purtek-yarra, mŭtbarun.	
Close (near)	ngĕriban	ngiriban.	
Cloud ..	kŏlŭmlŏm	kowī.	
Club ..	nowla	nowla.	
Cockatoo, white.	lapăl	lăpal	mallawil.
Cold	wângŭm	wângŭm, tûrra-uniran.	
Come ..	purŭmpurŭm ..	pierongi, marra ..	ngirik.
Come (with me).	purŭm-ɼăjalŭm ..	marangī.	
Come on ..	marañurbir	marangī.	
Come up ..	trambiri	trambiri.	
Cook ..	cĕrbambira	tumban (*fire*).	
Corroboree	chunbal	chunbal, malaujira ..	chunbal.
Cough ..	kundu	kundiri.	
Country ..	wallalji	wallalji	wallâlji.
Cover ..	kobbuliamberi ..	kobbuliamberi.	
Crawl ..	.. ..	marramarra-u-ulmi.	
Creek ..	muttawarra	muttawarra, yanam ..	yanam.
Cry	ngadangadao	ngadangadao.	
Cut	karrigbamberi ..	kadigbamberi.	
Dark ..	.. ..	manbin.	
Dead ..	digbella-barŭñgaban ..	digbella-beran-a-digbella-iran.	
Deep ..	.. ..	ngĕribowrun.	
Devil (white man that goesabout.)	chuarim, yuarim-guanim.	chuariuga-nam-irau ..	yuarim-guaniuga.
Dig	traburra	tarabira.	
Dingo ..	tulam	tulambi	tulam.
Dirty ..	churdum	churdum	warra-alwa.
Drink ..	olag-yera	mola-yarra-wiira.	
Dry	turbam	turbam.	
Early ..	ñigan-ari, kombulan ..	ñigan-ari.	
Ears	yardum	yardum	yambirum.
East ..	kolor-berigbi-ɼja ..	kolor-berigberi-ira.	
Eat	jamjam, yangyera ..	yangyera	yangyera.
Elbow ..	chunkum	chunkum.	
Empty ..	ñininima	ñininima.	
Every ..	kara-iirim	ka-iirim.	
Eye	molo	molayera, mula.	
Eyebrows ..	wârramilla	piberri, piwarra.	
Face	molum	molum.	
Fall	burbak-barown ..	burbak-barown.	
False ..	yakoninji-nowin ..	yakoninji-yowī.	
Far away ..	ñiwal	ñiwai, marădgilli-ira ..	ñiwăl.
Faster ..	wârangun	wârangun	wârangun.
Fat	ăntagallin	antagallin.	
Father ..	.. ..	ngabun.	
Fetch ..	kirra-ĭrra-yarra ..	kŭrra-ĭrra-yarra ..	kŭrrayărrărăn.
Fight ..	.. ..	werrimwerrim.	
Fill	ombolyibarra ..	omboljibara-niran.	
Find ..	.. ..	kolliñgajalli.	

English.	*Walki.*	*Munmulla.*	*Nowilnowilanna.*
Fingers ..	mallam	mallam	mallam.
Finish ..	kŭrrabiamberum ..	kŭrrabira-mi-ira.	
Fire	tumbak	tumban	kechowerum.
First ..	buriñgiăma	buriñama.	
Fish	konarım	konarim.	
Five (or any large number).	chĕraki	chitakan	warrangarri.
Fly	bunul	bunul	bunul.
Fly (march)	kulalji	kŭrjalji	burrdi.
Foot	tambala	tambala	tambala.
Forget (not remember).	bokoñara	bokoñara	bokoñara.
Four ..	mulako, murgimda ..	murrgamurrga ..	malakown.
Full	paliambera	pulī-iran.	
Get	pibiămbĭrum	pib ămbĕrum.	
Girl	kollakolla - bullum, woolloomoolool.	mgianīp, wiūīīnurbarun, wooloomoolool.	yemanäni.
Give ..	wītbĕnigbĕri	wītbĕnigbĕri	wītbĕnigbĕri.
Go	jimenkilli	jimĭnkilli-ūn-irau ..	kimenkillem.
Good ..	konagyamberum, balmanben.	koniñgyamberum, balmanben (kakin, mungowl) (*Yamandil words*).	balmanben, nachi, tamalın, kangī.
Gum (from spinifex roots).	kalla	cbĕdowrun, chertui or chertwi (*dust, dirt*).	
Hair ..	yamberun	tumu-burrum.	
Hand ..	malla	mallam	malla.
Hang ..	ta bumberi	tatbamberi.	
Hard ..	lădgĭnamayu	ladginamayu.	
Have ..	pibiamberum	pibiamberum.	
Hawk ..	. .. .	gĭllalmi, girgunji.	
Head ..	tumu	tumu	tumu.
Hear ..	angkorunĭin	yardomira.	
High ..	piringbi	piringbi.	
Hill	kanarum	kanarum	ngaringa.
Hold ..	konigwâmbarim ..	kŏnigwâmbĕrum.	
Horse ..	libĭn (*a West Kimberley word adopted under the idea that it was English.*)	wakuin.	
Hot	mallalom	mallalom	mallalom.
House ..	tam	tambi, taki	taunga.
Humming stick.	.. ..	karakal, biliangun.	
Hungry ..	koningbu	puralam, koninbi.	
Hush ..	charago	charago	wŭrrawŭrriara.
I	ngiin	ngiin, ngiinoki ..	ngiin.
Ibis	chattami	chattami.	
Iguana ..	kañari	kañari, kurrdi (*lizard*)	kurrdi.
Java sparrow (or any small bird).	jirgul	jirgul	jirgalla.

English.	*Walki.*	*Munmulla.*	*Nowulnowillanna.*
Kangaroo ..	jeri	jerimbi	jeri.
Kill	digbella-barangabun. wĕjiba (*hurt*).	digbella-ñu-irau. wĕjibara (*hurt*).	
Knee ..	manjura	manjura.	
Knife ..	ngakin	ngiira.	
Knock up ..	ngeligyerown. . ..	neligi-ira.	
Know ..	bokōni	bokom.	
Laugh ..	kălkălă-bărără ..	kălkălă-bărănă.	
Leap ..	chargwarum	chargwarum, jakiruni.	
Leave .	wīini	wīmbarra	wīini.
Left hand ..	. .. .	barraburra.	
Leg	yowara	yowara	yowara.
Litt up ..	tumbarim.		
Like (similar).	wīini-inju	wīini-ira.	
Little ..	wâñagŭl	wânawârra	wâllalael.
Long time ..	ahmum (*lengthen* a to suit the time).	ahmum	kallalubgi n.
Lose ..	ñunanuma	ñeñow-ura.	
Man, old ..	mŭnămbŭrri	munamburri	munamburri.
Man, young..	mălvara	năl'yara, n ăllilem ..	waninunga.
Matter (what is).	l ŏblŏa-kĕrima ..	kobbon-kerima.	
Moon ..	kanga..	chowranji	chowranji.
Morrow, to-	n ăkămīllan	ñigan-wīran (*night come up*).	
Mosquito ..	kulinji	kulunji	ñiriwinji.
Mouth .	tōndum	tōndum	dongana.
Mud ..	numbam	numbai.	
Native companion.	kurundal	kurundal.	
Near ..	ngyiangyĭtbir ..	ngyiangyĭtbir.. ..	ngēriban.
Neck ..	olam	olam.	
New.. ..	kujakobarana, ngolmĕru.	ngolmeru.	
Night ..	ñigan	ñigan	ñigan.
No	muan, antabarana, nakingum.	moan, nganbara ..	muangaga, nguagan.
Nose ..	manilla	manilla, minbari ..	yegonan.
Ochre (red, used for paint).	patil	patil.	
One	chĕrowi	chĕrowi	cherowi, cheragun.
Paper - bark tree.	wuranji	langunda	wuranji.
Parrot, rose-crested.	. .. .	kurukkurukŭal.	
Penis ..	ñawun	ñawun.	
Pitury ..	kangulan	kangulan.	
Play.. ..	puriāra	puriara.	
Pouch (dilly-bag).	yowinji	yowinji.	
Quickly ..	warangan	warangun	warangan.
Rain ..	chatan	chatan	chatan.

English.	*Walki.*	*Munmulla.*	*Nowilnowelanna.*
Rainbow ..	tariaril	tariaril	tariaril.
Right hand..	.. ..	ngurrangurra.	
River ..	warramınim, mutta-warra.	muttawarra, narago. yanam.	yanam.
Rope ..	undunin	unchini.	
Rub	pongalı, pia bambera	pia-bara.	
Run away ..	yurbarı, wijıbare ..	yurbari.	
Salt	karingumbı	karim	talin (*cf. Sea*).
Same ..	wīniga-ınjin	wīni-ira	wīini.
Say	pijong, jarrok ..	kejao, kejam, jarrok..	kejam.
Sea	kăllarum	kallarum	talungurra.
See	murlo - tĕrwamberi. marga - dugbaru — *See!* (exclamation)	mulu-tubambera.	
Shadow ..	mongul	mongul	mongul.
Shake ..	othed-bamberi ..	wangad-beri.	
Shield ..	mıtal	mıtal.	
Shoulders ..	turnali	banala	burr'nuindin.
Shout ..	charra-yarrun ..	charra-yarrun ..	charra-yarrun.
Shut ..	chura-bamberi ..	chura-bari.	
Sick	waranbarran, wiji ..	warranbarana, waran-jin.	warangi.
Side	wallanbum	wallanbum.	
Sit down ..	rodiarun, ŭrt-barun. (*The compounds of "urt," to stop, refer more to the act of stopping.*)	u'urtjıbarra, rodiarun, rodi ıbarana.	lola-yuarowi.
Skin ..	walum	walum.	
Sky	wârdal	wârdal, tirinji.	
Sleep ..	moryin	moryin	moryin.
Slowly (with care).	marga..	marga..	marga.
Smoke ..	wangim	wangim.	
Snail ..	yĕmur	yemur..	yemur.
Snake (general name).	ngamari	ngamari	ngamari.
Soil (ground)	.. ..	obedowrun.	
Spear ..	kalumbı	kalumbı	kalumbi.
Spear-head ..	chimbala	chimbala	kanillambi.
Stand up ..	thadbaru	thadbaru.	
Stars ..	wârdal-waŋagul ..	wârdal	wiñuwanim.
Steal ..	pibumberamba ..	pibumberamba.	
Stone ..	ngari	ngari	ngari.
Stop ..	uryibarana - marga, lungī, ŭrt, urı-ıjı-arun	uryıbaran-a-marga-a-a-a-ıran.	ŭrt.
Sugar - bag (bees' honey).	karaı	karaı.	
Sun	banda	banda	bandul.
Swelling (blister).	merjıl	merjıl	
Swim ..	ngiragana	ngira-gī-ara.	
Take away ..	marrabarăji-burra ..	marra-barana, mara-biara-iranbiri.	

English.	*Walka.*	*Muamdha*	*Nowlnowilanna.*
Take off ..	pallalgumbera ..	pallalgumbera ..	lolabambera.
Talk ..	pigong. jarrok .	kejao	kejam.
Tarantula ..	banji	banji	banji.
Teeth ..	mindait	mindui.	
That one ..	tantua	lirkunji .. .	inji.
There ..	tana	o'erringana.	
Thigh ..	tälyara .. .	balyara.	
Think ..	wi-inia .. .	wiinia-ara.	
Thirsty ..	ulugunda .. .	ulugunda.	
Three .	murra-mukh, bangyēri.	murrga-murrgan ..	murrga-murrgan.
Throw ..	ngiriara	ngiriara	ngiriara.
Throwing-stick.	yandal, ngallul .	yangal, ngallul.	
Thunder ..	jimilla	jimilla	jimillering.
Toes.. ..	lirap	lirap.	
Tomahawk ..	pungam .. .	pungam, ginalgi, lambura.	
Too tight .	. . ..	mando-papaya ..	chanko-papaya.
Track ..	. . ..	warrawarra-illa.	
Tree ..	koalin.. .. .	koalin, makati ira .	koalin.
True .	konnga - wichamjimberi.	tnrambiri, witbamberi.	
Turkey ..	tuloka	tuloka .. .	tuloka.
Two.. ..	kujarra pangañēri ..	pangañeri	pangañeri.
Want ..	wichumbamberi ..	wichbamberi.	
Wash ..	logulo-logulbara ..	logulologulbara ..	loguliara.
Water ..	kolo'e, kurnang, kolum.	kolo'm, kolum ..	kolo'e.
West ..	dargun-wiirt .. .	dargun-wurt	
Wet ..	kibaburowinji ..	chutam-wamiran.	
What is the matter?	kobbon-kerima ..	kobbon-kerima .	kobbon-kerima
What name?	kobbon-arun	kobbon-arun	kobbon-arun.
Where?	kowya, kayagilli. (*The latter word was unknown till* 1891, *and then rapidly became universal.*)	kowya, kayagilli .	kowya, kayagilli.
Whirlwind, large.	chelowinan, konkolinal (chuman = *small whirlwind*)	chelowinan.	
Whistle ..	wiñarra	wiñira	uriñun.
White ants ..	lanjalum	lanjalum	lanjalum.
White man ..	chuarim, oldjin ..	chuarim, yuarim ..	yuarim.
Wind ..	kangali	kangoli.	
Woman, old	yemanini	yemannni	yemanani.
Woman, young	kollakolla-bullum ..	wiñinñurbarun ..	yemanani-wirimbi.
Wood adder	gunaji	pulinji	gunaji.
Yellow bark tree.	jinolin.		
Yes	wiinabarra, iyow ..	wiinabarra, iyow ..	ya, iyow.
You.. ..	nundu	ñingan, burrumbi ..	ñingan.
Yuarim tree	yuarim.		

Bambiri is used as an affix to any noun with the general sense of "fetch or carry," as shovel-bambiri, pick-bamberi, but wandag-bambiri pick, etc., would be equally correct.

III. *Vocabularies of the Yamandil and Larrakia Dialects, by* E. B. Rigby.

English.	*Yamandil.*	*Larrakia.*
Afraid		murjalming.
Afternoon		guliñower.
All right		bachi.
Alligator		cumimbar, dongaliubar.
Another		kalagowa.
Arm	karail	gwiarrina.
Baby		*larri.*
Back	koji	millangwa.
Bad	jigillim	allingin, gwara.
Bark		*mañguruma.*
Beard	towara	kukugwa, *gueabalma.*
Bee		adgwa.
Before		yallingan.
Belly	melia	mirrima.
Big		kuligwa, *gulingi.*
Bite		danbarigi.
Black		numunqoi.
Blood		yamajila, *namījila.*
Bone		muryn, tamarin, *mojŏka*
Bowels		*naman-namanak.*
Boy	kowran, kaur-wran	kym.
Break	dubberiamberi.	
Breast	tornal	kuminkuppa, *mamabilma.*
Breath		wumalin.
Brother	nachi	nella.
Brother, elder		*qalaliva.*
Brother, younger		*nĭnimilla.*
Bury		ngagiup.
By-and-by		*alang.*
Call	chara-nguliangera	nigowin-bigillup.
Camp		*gunegeirqua.*
Canoe		*gŭnugarra.*
Carry		gwañinma.
Centipede		mallinma.
Child		towara, children=*banilla.*
Clean		ngarralngaralgwi.
Close (near)	ngeriban	kungwa-iparra.
Cloud	kaloa.	
Cockatoo, white		*nangarangwarra.*
Cold	wangun	*abbulduppi.*
Come	marriowja.	
Come on		*nallak.*
Crow		*gagabar.*
Dark		*lamingwa.*
Day		*gullinaua.*
Dead		*bilingil.*

English.	*Yamandil.*	*Larrakia.*
Dingo	tulam.	
Dog, tame		*mamarul.*
Dog, wild		*milinga.*
Drink		*anjarra.*
Duck, black		*bĕnemara.*
Ears	karara	*banarra.*
Eat		*annukmaggai.*
Egg		*bumbar.*
Elbow	chonga.	
Emu		*langura.*
Excrement		*munmar.*
Eye	molu	*limurra.*
Eyebrow	waramilla	
Face	angara.	
Far away		kobai.
Fat		*biowalba.*
Father		*pĕpi.*
Fingers	mallam.	
Fire		*bokunaida.*
Fish		*mudduwa.*
Fly, *n.*		*mulalwa.*
Food		*kukeri.*
Foot	tambala	*qiălka.*
Good	mungowl	*bachimalla.*
Grass		*malluelmall.*
Ground		gwialwa, *guealwa.*
Hair	warranu	*bĭrrĭjia.*
Hand		*qiarwarra.*
Head	tongola	*malluma.*
Heat		*errungergum.*
Hill		*gumaruka.*
Hungry		*ammunanding.*
Kangaroo		*langutpa.*
Knee	manjura.	
Know, I don't		*elabauna.*
Laughing jackass		*lanurba.*
Leg	tombio.	
Light, *n.*		*lalirgwa.*
Little		*muluchil.*
Man, black		*belwirra, barning*
Man, old		*lauraba.*
Man, white		*angarrak.*
Man, young		*mullenjin.*
Milk		*gunnumkappa.*
Moon		*lowrua.*
Morrow, to-		
Mosquito		*lamda.*
Mother		*wuding.*
Mouth	nowala	*gurbalqa.*
Native companion		*toluba.*
Neck	jerawia.	
Night		*lamungma.*
No		*alika.*
Nose	kolmara	*qianguar.*
Opossum		*makmilla.*

English.	*Yamandi.*	*Larrakia.*
Pelican		*wadurra.*
Plenty		*barotink*
Rain		*malnba, beara.*
Sea	karar-	
See		*nagaliga.*
Shoulders	bambala.	
Side	telumbara.	
Sister		anmalk.
Sister, elder		*buerra.*
Sister, younger		*weramaka.*
Sit		*igada.*
Skin		*baiaba.*
Sleep		*allinmangaligalmaŋa.*
Smoke		*bimuchala.*
Snake		*rapura.*
Spear, reed		*chinbala.*
Spear, war		*dowingwar.*
Star		*wamalla.*
Stomach		*gallama.*
Stone		*lamolla, karramulla.*
Sun		*laliera.*
Sweet		*manneh.*
Sweetheart		adelik.
Swollen		wallah.
Teeth		*nabureru.*
Thanks		lankī ni.
Thigh		*mäka.*
Thirsty		*amangulpta*
Throwing-stick		balletta, *bellata.*
Thunder		*balluelbal.*
To-day		*albuinwa.*
Tomahawk		*naraugima.*
To-morrow		*emangua.*
Tongue		*yomilla.*
Track of foot		*buetbar.*
Turkey, wild		*lamamu*
Walk		*akgarai.*
Water		*garrawa.*
Where are the blacks?		*arabetiŋi belira?*
Wife		*alladuk.*
Wind		*gurewa.*
Woman, black		*barning-eremeur.*
Woman, old		*gamul.*
Wood		*mirriberma.*
Yes		gu, ku.
Yesterday		*gulama.*

The *gwa* in words for back, beard, big, etc., is merely an affix with no special meaning.

LARRAKIA NUMERALS AND PRONOUNS.

One, *kulaguk*; two, *kalletĭlik*; three, *kalletĭlik-kulaguk*; four, *kalletĭlik-kalletĭlik*; I, *anunga*; to me, anigi; you, *aejana*; to you, denigi.

The words in italic have been added from Foelsche's Larrakia Vocabulary in Curr's "Australian Race," vol. i, pp. 258, 259.

"**The American Anthropologist,**" in Nos. VI and VII, for 1897, contains amongst other articles—"Wormian Bones in Artificially Deformed Kwakiutl Crania," by George A. Dorsey; "The Long Bones of Kwakiutl and Salish Indians," by George A. Dorsey; "The Missing Authorities on Mayan Antiquities," by Daniel G. Brinton; "Scopelism," by Robert Fletcher, M.D.; "The Beginning of Zooculture," by W. J. McGee.

"**The American Antiquarian,**" in No. IV, vol. xix. contains amongst other articles—"Omitlan: A Prehistoric City in Mexico," by William Niven; "Mythologic Totems," by Stephen D. Peet; Migration of "Algonquin Tribes and Other Stocks" (fifth paper), by Cyrus Thomas; "The Sign of the Cross," by Lady Cook; "Ruins and Picture Writings in the Cañons of the McElmo and Hovenweep" (illustrated), by Lewis W. Gunckel; "The Houses of the Eskimos"; "Paleolithics in Egypt"; "Tomahawks and War Clubs"; "The Alaskan Natives on the Klondike"; "Aboriginal Boats on the North-West Coast."

"**Revue Mensuelle de L'École d'Anthropologie de Paris,**" in the November part of 1897, contains:—"Les Monuments mégalithiques christianisés," by A. de Mortillet; "La Taille dans le department du Gers," by R. Collignon; "Antiquité de L'Homme," by G. de Mortillet.

"**Journal of the Anthropological Society of Tōkyō,**" in Nos. 137–138 of vol. xii, contains:—"On some Haniwa Objects, recently discovered in Musashi and Hitachi"; D'Anvers' "Story of Early Man"; "Clay Human Figures from an ancient Sepulchral Mound in Hitachi."

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NOVEMBER 9TH, 1897.

E. W. BRABROOK, Esq., C.B., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

Dr. GARSON congratulated the President in the name of the Institute on the honour the Queen had conferred upon him, an honour so well deserved for his many services not only to this Institute but to many other Societies and interests.

The PRESIDENT returned sincere thanks for the kindly expression of goodwill.

The PRESIDENT thanked the Rev. Mr. Hutchinson for his book on "Marriage Customs in Many Lands."

Mr. O. M. DALTON and Mr. C. H. READ then read their paper on "Works of Art from Benin City," and Mr. W. GOWLAND described the metals used in the bronze plaques. A vote of thanks was passed to the two authors, and the President thanked Mr. Neville for various bronzes and ivories he had kindly lent for exhibition.

WORKS *of* ART *from* BENIN CITY. By C. H. READ and O. M. DALTON.

[WITH PLATES XVII–XXII.]

THE city of Benin lies about seventy-three miles from the mouth of the Formoso or Benin river. It was the capital of the kingdom of the same name, and was regarded as the political and religious metropolis of a wide area containing several provincial towns, of which Gwato, the river port, was commercially the most important. The Bini, like all the negro tribes, appear to have been pushed down from the north by the impact of more warlike peoples; but, once arrived at their present seats, the nature of the country enabled them not only to maintain themselves, but to extend their influence along the rivers and the coast to Warri, Badagry and Lagos. Though their language differs somewhat from that of the inhabitants of Yoruba and Dahomey, in manners, customs and religion these peoples must be regarded as integral parts of a single ethnological whole.[1]

Benin was one of the first important negro kingdoms which became known to Europeans, and it looms large in the history of early travel. Discovered at the close of the fifteenth century, in the sixteenth and seventeenth it was styled "The great Benin," and was an important market for European commerce. It then seems to have entered upon a period of decadence, only terminated by the episodes of the present year, when the capital was overthrown and its site doomed to lie waste for ever.

Although the present orientation of Benin seems to be towards the south, it may well have had indirect relations with the north and east from very early time. On that ancient waterway the Niger, near the lower course which it lies, stand the once imperial cities of Jenné and Timbuctoo; the former the home of a race supposed to have derived its origin from Egypt, and to have maintained relations with that country; the latter the Nijni-Novgorod of North-West Africa, on which caravan routes from Morocco and Tripoli converge. And even before these empires arose, who can say what shreds and patches of Mediterranean civilization may not have drifted with the drifting peoples far into the darkness of the interior? But

[1] R. F. Burton: "Abeokuta," I., p. 222. London, 1863.

whatever the antiquity of such trade-routes may be, they emerged as great arteries of commerce when the Arabs and the Moors penetrated the Sahara to the Soudan, and sold pepper and slaves on the Mediterranean seaboard. To what extent Benin may have been affected by such traffic it is now almost impossible to determine. It is sufficient to recall the fact that at a period previous to the first European voyages, the far interior was traversed by a network of ways connecting the negro countries with the northern inland sea and with Eastern Africa, and that it contained markets frequented by merchants representative of various races and lands. The belt of states lying to the north of the Guinea Coast, Borgu and Bornou rich in horses, Sokoto and the commercial district of Haussaland, would all be possible conductors of foreign influence ; and that trade flowed regularly along this line towards the east we learn from Leo Africanus, who, at the beginning of the sixteenth century descended from Morocco to Jenné and Timbuctoo, passing thence through Kano and Bornou, to a point somewhere to the east of Lake Tchad.

If we turn now to the southern side and to the Gulf of Guinea we have something more definite than conjecture to record. Dismissing as too remote for our purpose the old or disputed stories of Necho and Hanno, of the Genoese in the thirteenth century, and the Normans of Dieppe in the fourteenth, we find that the coast of Benin was first passed by two Portuguese captains[1] in the year 1470 A.D.

But though one Sequeira is said to have discovered Benin in 1472[2] it seems that the interior was not explored until about fifteen years later, when the first visit to Benin city was made by Alonso d'Aveiro, who is said to have brought back not only "pepper with a taile," but also an ambassador from the King of Benin to King John II of Portugal, asking that missionaries might be sent to his capital. The request is said to have been due to interested motives, and may have been immediately suggested by d'Aveiro himself, or by the King's previous knowledge of European power, derived through native trade to the Gold Coast, where Portugal had been established for some years.

This early ambassador is responsible for the story that the kings of Benin received their investiture from a powerful monarch dwelling some hundreds of leagues towards the east, and either himself called Ogané or inhabiting a city of that

[1] João de Santarem and Pedro de Escobar. Major: "Life of Prince Henry the Navigator," p. 328. London, 1868.

[2] Antonio Galvano: "The Discoveries of the World," Hakluyt Soc. London, 1892, p. 75.

name.[1] This monarch is reported to have sent to each new king of Benin as insignia of his office, a cross, a staff, and a cap, all of shining brass. When we remember that at this period Africa was the home of all marvels and the seat of the empire of Prester John, we shall not be surprised to learn that the Portuguese found in these statements a confirmation of their favourite geographical dream. It may well be that the ambassador's picturesque tale of inland intercourse may have an actual foundation in fact, and that relations of some kind or other did exist between the negroes of Guinea and some of the peoples of Eastern Africa.[2] The sequel appears to have been that a mission did go to Benin, but that it met with little success, and was withdrawn in the following reign.

Between this time and the middle of the next century, isolated adventurers may well have gone up into the interior, men perhaps in some cases possessing mechanical skill, who, like Bulfinch Lamb[3] and some Portuguese craftsmen in Dahomey two centuries later, would have been highly appreciated at the native court. But it was after 1550 that the tide of commerce began to set strongly in this direction, the Portuguese having in 1536 abandoned their claims to exclusive trading rights on the Guinea coast.[4] It was now that our own countrymen began to fit out expeditions, several of which reached Benin before Queen Elizabeth died. But the leaders of these expeditions were not literary men, and they add little to our knowledge of the place and people. The quaint description which Hakluyt gives of the voyage of Windham and Pinteado (1553) forms one of the most amusing narratives of sixteenth century travel.

The first detailed picture of Benin city was derived from Dutch sources, and published in De Bry's compilation.[5] The narrative, illustrated by plates by Theodore De Bry, is evidently based on accounts derived from eye-witnesses, and is a fount of information freely drawn upon by other

[1] Major, *op. cit.*, p. 387, and João de Barros, A. Asia, Decade I, Part I, Book III, chap. 4.

[2] See the remarks of Mr. R. B. N. Walker, in the discussion following this paper. There are certain points about the decorative art of Abyssinia which resemble the art of Benin. The cross worn on the neck by some of the cast figures looks more like an Oriental than a Latin cross. The custom of circumcision also appears to have been carried out in a similar way in both countries.

[3] W. Smith: "New Voyage to Guinea," p. 176. London, 1744.

[4] Anderson: "History of Commerce," vol. i, p. 365.

[5] "India Orientalis," Part VI. Published in German, Latin, and French at Frankfort-on-the-Main about 1600 A.D. by the brothers de Bry. The original Dutch account of Benin is by Peter de Marees. The German and Latin translations are by Artus, of Dantzig. In giving references to the "India Orientalis," de Bry's name is used for the sake of convenience.

writers, often without acknowledgment. The description of Van Nyendael, another Dutchman, appeared about a hundred years later to share a similar fate. Van Nyendael reached Benin in 1702, and his account is published at length in Bosman's "Description of Guinea." Other accounts by Dapper, Villault, Barbot and others are less fruitful in original observation; and it is not until the beginning of our own century, when the glories of Benin had long been on the wane, that we get narratives which furnish us with many details connected with works of native art. Of these, that of Lieutenant King[1] in 1820, that of Captain Fawckner in 1825,[2] and that of Messrs. Moffat and Smith in 1838[3] are especially deserving of notice. It may be mentioned that Belzoni had ere this met with his death at Gwato, and that Sir Richard Burton,[4] who has left an exceedingly valuable description, was at Benin in 1862. Coming to more recent years, we find that the city was visited in the present decade by an official of the Niger Company, and by a member of a private firm; while Captain Gallwey of the East Lancashire Regiment went up on a mission in 1892. The story of the final expedition needs no recapitulation here.

In reviewing the history of European exploration, we must assign a pre-eminent position to the Portuguese. Not only did they precede the English, the Dutch, and the French, but here, as elsewhere, they seem to have possessed a peculiar power of adapting themselves to the conditions of tropical life. Even their slave traffic between Elmina and the districts about the Rio Forçados seems to have conduced to closer relations with the natives than those enjoyed by other European peoples, and in the sixteenth century traders appear to have settled down upon the banks of that river.[5] The first English expedition, led to the city by a native of Portugal, found in Benin a king who had been brought up from his youth to speak the Portuguese tongue. And at the commencement of the seventeenth century, when the Portuguese were beginning to recede before their more energetic rivals on the coast, we are told that many of them retreated up the country, and, intermarrying with the natives, were able to place difficulties in the way of explorers, and largely control the inland commerce.[6] They are said to have had chapels near their houses and to have been energetic in making proselytes. Towards the close of the same century a

[1] "Journal des Voyages," XIII, p. 313. Paris, 1822.
[2] "Narrative of Capt. J. Fawckner's Travels, &c.," London, 1837.
[3] "Journ. R. Geog. Soc.," vol. xi, 1841, p. 190.
[4] *Vide* "Fraser's Magazine," Feb., March, and April, 1863. "My Wanderings in West Africa," by a F.R.G.S. Also "Cornhill Magazine," 1880.
[5] "India Orientalis," Part VI, chap. 54.
[6] Villault in Astley's collection, ii, p. 382 London. 1745.

regular mission was established at Warri, traces of which are still believed to exist.[1] Burton, commenting on the permanent effect produced by the Portuguese, notes that even in 1862 the old men could speak a kind of Africo-Lusitanian.

According to Sir Ralph Moor's report,[2] Captain Boisragon's book, "The Benin Massacre," and Commander Bacon's work, "Benin; the City of Blood," Benin city was a rambling town divided into two parts by a broad avenue. On the south side of this was the king's quarter, consisting of a number of successive courts, and once much larger than our expedition found it. On the north side were the houses of the lesser chiefs and people; but the whole was in a state of decay, so that the town had become little better than a large and scattered village. The gradual process of degeneration had been marked by successive travellers, and was accelerated by the evil effects of sedition and civil war. The city had probably seen its best days before 1600, though it can hardly have ever resembled a large European capital with towers and spires—the guise in which a plate accompanying Ogilby's description presents it to our view.[3] The palace had not escaped the general decay: several parts of it appear to have been disused, and in the once extensive stables no horses were to be found. Fawckner in 1825 saw three solitary horses belonging to the king which no one was bold enough to ride; and these may have been almost the last of the great numbers which the city must at one time have contained.

The houses in general had clay walls and palm-leaf roofs. If large, they had several courts, and some may have had outer verandahs.[4] The rooms had no windows but had flat roofs with a central aperture. Under this opening there was often a tank to receive the rain-water, which was conveyed away through a hole in one corner, while in the centre was placed a fetish, such as a cone of clay or half-buried pot of water. This seems to be the foundation of the report that the Benin and Yoruban house had an atrium and impluvium after the Roman fashion. Burton goes so far as to conjecture that this style of architecture may have actually been derived from the Roman colonies of North Africa.[5]

Besides the private places of worship, which were in alcoves at the ends of the rooms, there were seven large Ju-Ju compounds not far from the palace, each two or three acres in extent, surrounded by mud walls, and with a pent roof at one

[1] "Fraser," 1863, p. 288 note.
[2] Blue Book, "Africa," No. 6, 1897.
[3] "Africa." London, 1670. See also Dapper, ed. 1676.
[4] De Bry, Part VI, chap. 55.
[5] "Fraser," 1863, p. 278, and Fawckner, *op. cit.*, pp. 32 and 71.

end. Under this roof was a long altar of clay, on which stood the carved ivory tusks supported at the base by human heads of cast metal. On the altars were maces for killing victims—possibly only those connected with the royal blood, who, as in Dahomey, may have been first stunned, and not decapitated straight off like common folk.[1]

It is important to note that in 1702 Van Nyendael saw in the palace eleven tusks, supposed to represent the king's gods,[2] and supported in this identical manner; while in 1820 Lieutenant King saw eight or ten before one of the façades, arranged on each side of the central door, and with the points turned to the wall. Tusks were found in fetish houses in several towns, as also were cast metal and wooden heads, life-sized wooden birds, and sticks surmounted by a carved hand with pointing index. The hand and arm are frequently represented on metal objects and are either cast or chased.

The palace itself had several points of interest. It seems to have had in the centre of one side a pyramidal tower 30 or 40 feet high, which is remarked by several travellers, and caused Captain Fawckner to compare the whole building to a British shot factory.[3] From the top of this tower was fixed a cast metal snake, the head of which came down to the ground, while the body was as thick as that of a man. Lieutenant King was told in 1820 that this snake had been there for centuries, and this may be true, for Van Nyendael evidently saw more than one snake cast in metal on different parts of the roof. It may be noticed that where the snake occurs it is usually represented head downwards. When the city was entered this year, a similar snake was also observed on the roof of the palaver house.

Some of the rooms had transverse beams covered with metal plates ornamented with divers figures. This peculiarity had also been observed by earlier visitors, for it is mentioned by Dapper,[4] who speaks of pillars cased in metal, "on which are engraved their victories, and which are always kept very bright." It is possible that the allusion here may be to thin plates of brass with figures executed in repoussé work, although another explanation may perhaps be suggested. Wood seems to have entered more largely into the construction of the palace than into that of ordinary houses; indeed Fawckner speaks as if the whole of one part were wooden. In the interior decoration native cloths were largely employed.

The king of Benin lived in the usual atmosphere of a West

[1] Sir R. Moor, "Report," p. 45.
[2] Bosman's "Descr. of Guinea," in Pinkerton, vol. xvi, p. 535.
[3] *Op. cit.*, p. 83.
[4] Ed. Amsterdam, 1686, p. 303.

African court. His title was *Obbá*, and he was an object of adoration to his subjects; on this fact his power may have largely depended.[1] Under him were the captain of war, who seems to have resided in a suburb, and possibly two or three other great chiefs, who were his principal advisers. Below these were the great body of chiefs or "homograns," from whose number the principal public officers and local governors were taken. Then came the fiadors, or brokers, and the subordinate functionaries, then the commonalty, and finally the slaves. The sign of nobility and also of office was a coral necklace placed round the recipient's neck by the king himself, sometimes with great solemnity, at a festival called the coral feast: to lose this necklace was death. Coral was highly valued, and a man's rank seems to have been in proportion to the amount he was allowed to crowd upon his person. The queen-mother sometimes played a great part at the court, and the king's wives were exceedingly numerous.[2]

In the sixteenth century the more important chiefs were wont, as De Bry tells us, to ride side-saddle upon led horses, a fact which is now borne out by better evidence than that supplied by his rather fanciful plate. They were supported by retainers, who held over their heads either shields or umbrellas, and accompanied by a band of musicians playing on ivory horns, gong-gongs, drums, harps, and a kind of rattle.

Of costume it is difficult to say much in view of the multiplicity of fashions and the necessity for a careful comparison of all available materials. A point which should be noticed is the extraordinary variety in the style of dressing and covering the head; in this respect the remark in De Bry's Latin edition, "quot homines tot sensus," seems perfectly accurate, and in a group of fifty people very few would be seen with the same kind of headdress.[3] Coral beads were sometimes threaded in the hair[4] or attached to the hat; the "crown" of the King of Warri was of the latter kind, and 3 feet high.[5] In the manufacture of caps the skins of leopards and other animals were used, and leopards' skins were also worn on the body. The following is Fawckner's description of the king's special messenger sent out to greet him: "He wore a sort of short petticoat from the waist down to the knees of a cloth . . . resembling our white bunting. This encircled his loins and set off like an ancient dame's hooped petticoat[6]:

[1] Burton in "Fraser," p. 414.
[2] On the "constitution" of Benin, *vide* Burton *loc. cit.* 288 note.
[3] "Ind. Orient.," Part VI, chap. x, and Plate XXVI, where different coiffures are assigned to different ranks and professions.
[4] Fawckner, *op. cit.*, p. 5.
[5] King, *loc. cit.*, p. 318.
[6] *Cf.* Burton, *loc. cit.*, 414, 283.

the upper part of the body was naked, as well as the legs and feet. His neck was ornamented with strings of red coral: in his hand he held a leather fan."[1] And this is a description of the king in 1820: "The king came in clothed after the fashion of the country and wearing on his head a large round hat ornamented with gold lace. One of his arms was extended in a horizontal direction,[2] and supported by a great officer of state. The nail of one finger on each hand was of prodigious length, to show that his exalted rank placed him above all necessity of working for his living."[3]

To the fact that the king's arms were supported by attendants we shall have occasion to recur. Meanwhile we may remark that the same ceremony was observed by Fawckner five years afterwards, and that the queen-mother received a similar mark of respect from her women. The same honour was paid to the captain of war.

Warriors appear to have worn thick clothing on the upper part of the body, especially a kind of surcoat of leopard-skin, often terminating in long pendants fitted with small bells. The weapons used were bows and arrows, swords and spears, with long shields for defence, apparently of rather slender construction in wattlework, and faced with metal plates: on none of the castings in the British Museum does a gun seem to be placed in the hands of a native. The people have nearly always been branded as cowards, and second-rate fighting-men.[4]

The social order rested on a basis of slavery, the slaves being largely drawn from the Sobo country to the east of Benin.[5] The Bini themselves were fond of trade, and a very large market was held in the city. All commercial transactions with Europeans were carried on by officials or brokers, called Fiadors—a word derived from the Portuguese—who went down to Gwato and bought cargoes on behalf of the king. They seem to have had some social status, and to have been invested with the coral collar.

The objects most in demand from Europe were stuffs, metal vessels, beads, horse-tails, and pieces of ring-money called manillas, which seem to have been exported as early as the sixteenth century,[6] and before cowries were first brought round the Cape from the Maldive Islands. The Bini must have been somewhat hampered in trade by the fact that their Ju-Ju forbade them to cross water.[7]

[1] *Op. cit.*, p. 82.
[2] *Cf.* Burton, *loc. cit.*, 414 and 286.
[3] King, *loc. cit.*, 315.
[4] Bosman, *loc. cit.*, p. 531.
[5] Boisragon, "Benin Massacre," p. 14. London, 1897
[6] Hakluyt, vol. ii, Part II, p. 52. [7] Blue Book, p. 46.

Religion as such lies rather outside the sphere of the present paper. It was of the usual West African type, especially similar to that of Yoruba and Dahomey, with plentiful sacrifice of the living to the interests of the dead. Various animals seem to have been regarded with veneration, and the "fetish" practices dominated the daily life of the people. Snakes, leopards, crocodiles, fish, birds, and heads of oxen, are all represented on the works of art.[1]

The panels which are our principal subject, form part of a series of about three hundred which are now in the British Museum, at present as a loan from the Foreign Office, but eventually the greater part of them will probably remain there as the property of the trustees. The history of their coming home is this. When it was announced that Benin had been taken and that many curious objects had been discovered there, official representation was made to the Government on behalf of the British Museum, so as to secure at any rate some of the specimens, and samples of these tablets were in consequence sent from the coast, as well as some other objects destined for the Queen. It was recommended that any other such tablets should be sent home, rather than be disposed of on the coast, and eventually the series now at the Museum arrived at the Crown Agent's, and subsequently it was arranged that they should be shown at the Museum.

Their appearance seemed to point to their originally having been buried, for they were, and many of them still are, covered with a fine red earth, in some to such an extent that the details could not be made out. It is not easy to understand why they are covered with this earth, but it seems certain that they were not buried, for Major Gallwey in a letter written just before he went out again, says, "The plaques were found heaped up anyhow on the floor of an empty house in the king's compound. None of them were hanging up nor were any buried. They appeared to be simply thrown in a heap and uncared for. As they all came from the king's compound, it would appear that they were not public property, and one can only suppose that they had been handed down from king to king for many successions, their value being evidently an unknown quantity." This is the only account of their finding that we have, and it effectually destroys any hope that a clue to their origin or use might be found in Benin itself, and we are thus thrown back upon the tablets themselves to solve their own mystery.

[1] Burton in "Fraser," 278; "Abeokuta," vol. i, p. 222. Ellis, "Ewe Speaking Peoples," etc.

It need scarcely be said that at the first sight of these remarkable works of art we were at once astounded at such an unexpected find, and puzzled to account for so highly developed an art among a race so entirely barbarous as were the Bini, and it must be confessed that the latter problem has not yet been solved.

The whole of the tablets are cast in moulds, and to those who are familiar with castings in metal, it will be clear that it is no exaggeration to call these highly developed. The only added tooling upon any of them is apparently the punched diaper, with which the background of nearly all is covered, and the ornament of a similar kind upon the dresses, bodies, or weapons of the figures. It may be that the faces and smoother surfaces have been tooled over, but until the very tenacious coating of red earth is cleaned off, it is not easy to speak with certainty as to this. The relief of some of the parts is very high, in many instances portions of the figures standing quite clear of the background, and it would seem as if the artist who modelled the originals had set himself to put as many difficulties as possible in the way of the caster. All of these difficulties have, however, been overcome with a certainty and skill which only long practice of a familiar art could produce. This alone, it may be mentioned in passing, goes to prove that at whatever period the objects now before us may have been made, they were produced by a people long acquainted with the art of casting metals. The method by which the tablets were produced can only be that known as the "*cire perdue*" process. By no other is it conceivable that so much extravagant relief and elaborately undercut detail could be represented with success. This process is probably familiar to most of the Fellows, but can be described in very few words. The model is first made in wax, and every part of its surface is covered with fine clay, and the whole work is eventually hidden in a mass of clay. An outlet is then made for the wax to escape, and the mass is heated until all the wax has been melted out, leaving of course a mould of exactly the design of the wax in its original state. The metal being poured in, fills every hollow left by the wax. What measure of success has attended the operation cannot of course be known until the clay is broken away to show the metal, and it will be obvious that only one casting can be made from the wax. Subsequent copies must afterwards be made with piece moulds from the first cast in metal. This peculiarity of the "*cire perdue*" process accounts for the fact, that while in several cases there are practically duplicate panels, in no instance are any two identical, the details always presenting some differences. As an instance of the sound apprenticeship that these savage metal-workers

must have served, it may be mentioned that wherever a projection of any size is seen on the front of a panel, a corresponding hollow is found on the back, thus at once lessening the weight and economising the metal.

This "*cire perdue*" process is that by which many of the finest Italian bronzes of the best period were produced, and we thus find the Benin savages using with familiarity and success a complicated method which satisfied the fastidious eye of the best artists of the Italian renaissance.

The panels vary in size, the largest being about 20 inches by 15 inches and the smallest about one quarter of this area. They seem to have been all made for the same purpose, as if to fit on a series of pilasters or on a beam. On Plate XIX, Fig. 1, may be seen one instance of a possible use of them, where they, or something like them, appear on the decoration of doorposts. Nearly all of them have been fixed up by large nails, as may be seen by the holes left where the nails have been roughly driven through. The want of regard for the designs, shown by the careless way in which the holes have been made, might be brought forward as an argument that they were used in this manner at a date long subsequent to their manufacture. But this belongs rather to the region of hypothesis.

The tablets or plaques, though by far the most numerous, show only one side of the art of bronze casting in Benin; the artificers were equally skilful in casting in the round, and the objects brought home comprise human heads, elaborate cylindrical pedestals for the equally elaborate tusks which represented their gods, armlets, and many articles of minor importance. Probably the most artistic and technically perfect of all the castings in the round is the really charming head of a girl,[1] with a reticulated conical head-dress, for which the Museum is indebted to the liberality of Sir William Ingram, Bart., who presented this as well as a very fine bronze stand for a tusk.

These tusks were remarkable both for their intricate carving and, in some instances, for their great size. In one case a tusk measured 7 feet 11 inches along the curve, in these days, I believe, a very unusual length. A considerable number of them were sold on the coast and afterwards disposed of at a City sale. The British Museum could not at the time buy more than one of them, from lack of funds, and two or three more would be welcome additions. It must be confessed, however, that the tusks present fewer variations of design than the bronzes; and the character of the carving is not novel, though many of the designs have not been hitherto known. The carving

[1] See p. 382.

upon them cannot at all compete with the modelling of the bronzes. The wax used for the latter presented no difficulty to the artist, who could easily produce a smooth rounded surface. The ivory carving, on the other hand, is not only inferior to the bronzes, but inferior also to much of the carving seen in the tusks produced further south, in Loango, for instance.

So far as the objects themselves furnish us with evidence, there would seem to be no difference in date of production between the tusks and the bronzes. The symbolism is much the same, as are also the dresses and other details. The tusks themselves show signs of considerable age, and we know moreover from the account of Van Nyendael that the tusks were in the city in the seventeenth century. This brings us to the question of the period at which these objects were produced. On Plate XVII is seen a European with a matchlock, in the costume of the middle of the sixteenth century, the details showing a familiarity with the dress that could scarcely be found at any time far distant from that in which the costume was daily before the artist's eyes. It would scarcely be reasonable, in fact, to think that so accurate a figure was produced in any other way than direct from the original. If it be so, we have a limit of date on one side, say the beginning of the reign of Elizabeth. It then becomes a question whether all of the castings were made at the same time. Another of the Europeans has what may perhaps be a flint-lock in his hand, and this would point to a later date for some of them. Again a large number of the figures of natives wear a well-marked dress, a kind of surcoat with the lower part of the front representing a leopard's face, and a dress of this pattern is in the Museum, from the spoils of one of the officers in the expedition. This coat was the garment of a modern Benin warrior, and though there is no proof that the pattern has not been in use in Benin for three centuries, yet its being in use at the present day is a fact which renders clear proof of its antiquity desirable. Many of the weapons, wands of office, and other objects represented on the tablets are also found in actual use in Benin. Thus the evidence available would seem to show that whereas the earliest date at which we can show the tablets to have been made is the middle of the sixteenth century, perhaps with the help of the Portuguese, there is a possibility that the manufacture continued later, though for how long we cannot at present say. Casting of an inferior kind continues down to the present time.

The term bronze has been used for the metal in which the tablets are cast, but it must not be imagined that they are all

of true bronze, *i.e.*, copper with a percentage of tin. Some of them are certainly of brass. On this point, however, one Fellow, Mr. Gowland, will speak with more authority.

In conclusion it is right that the thanks of the Institute and of all interested in its objects should be given to Sir Ralph Moor, K.C.M.G., Her Britannic Majesty's Consul-General and Commissioner for the Niger Coast Protectorate. But for his prompt and friendly action these very interesting monuments of a lost art might have been dispersed over the globe, instead of forming, as they now do, an important collection so large and various as to furnish a complete history of the dresses, weapons, and ceremonies of the Benin natives.

NOTE.—The foregoing brief account is intended merely as a preliminary sketch of the subject, which the writers hope to treat in a more exhaustive manner in an official publication.

Mr. W. GOWLAND, F.S.A., read the following remarks: Through the kindness of Mr. Read and Mr. Dalton, the authors of the preceding paper, I have been permitted to examine many of the specimens of the art castings from Benin, and to make a chemical analysis of fragments of four of the plaques.

An examination of the greater number of those in the British Museum by means of the touchstone showed that they consisted chiefly of two distinct types of copper alloys, one embracing mixtures of copper, zinc, and lead, and the other, mixtures of copper, lead and tin. The former may be termed "brasses" and the latter "bronzes"; but in neither have any definite proportions of the constituent metals been adhered to, and some of the castings contain both zinc and tin. This, however, is just what might be expected, and what indeed we find in most old metal-work, owing to defective castings, and old broken objects being melted up together, regardless of their composition, and recast. The plaques are generally of bronze, and the statuettes, with a few exceptions, of brass.

It by no means, however, follows that although these two classes of objects differ in composition they also differ in age. For, as the copper-lead-tin bronze is much easier to cast than the copper-zinc-lead brass, especially in the forms of the thin plaques, it would always be employed in making them whenever available.

The following analyses were made of a typical specimen of each type of the alloys.

PLAQUES FROM BENIN.

	Copper-zinc-lead-alloy.	Copper-lead-tin-alloy.*
Copper	78·50 per cent.	84·76 per cent.
Tin	·57 „	2·75 „
Lead	5·85 „	8·38 „
Zinc	14·34 „ (by diff.)	1·54 „
Iron	·54 „	·59 „
Nickel	Trace.	·35 „
Arsenic	·11 „	·61 „
Antimony	·09 „	·78 „
	100·00 „	99·76 „

* The amounts of arsenic and antimony present, and the association of these metals with nickel in this alloy, would seem to indicate the Iberian Peninsula, rather than Northern Europe, as the source from which the copper used in making it was obtained.

From these analyses it is evident that neither of these alloys could have been used for the manufacture of guns, or of wire, or rods, or of any objects in which strength was required; nor could domestic utensils, such as pots or pans, have been hammered out of them. They contain so much lead that they are too brittle for such purposes.

Hence the castings consisting of them have not been obtained by melting down any of these articles. The composition of the alloys undoubtedly indicates a foreign origin and points to Europe as the source from which they were derived. They were hence probably imported for the purpose of barter by the Portuguese in the form of ornaments, or of the armlets *manilios*, such as have been long used in that region as currency, and are represented on some of the figures on the plaques.

With one exception, the head of a negress in bronze, the castings are less perfectly modelled than those a trained sculptor would have produced by the *cerà perduta* process by which they have been cast. I hence think they are the work of some of the artisans or armourers, who always formed part of the crews of Portuguese ships of the sixteenth century, or of natives who were taught by them.

A somewhat parallel example to the introduction of European methods of working in metal by these Portuguese navigators in the countries they visited and traded with, is seen in Japan, where the sword-guards of the sixteenth century often bear European designs, executed by European methods.

It is hardly necessary to point out that the presence of zinc by no means indicates that they are of recent date, as brass,

i.e., an alloy of copper and zinc, was made by the Romans before our era, and very largely in Europe generally in the tenth century, by melting copper with calamine (a natural zinc carbonate).

From the foregoing it will be seen that the evidence derived from my examination of these castings in the laboratory, supports the opinions of the authors of the preceding paper with respect to their age, and which are based on entirely different data. I have to thank my friend Professor Roberts-Austen for kindly permitting me to make these analyses in the Research Laboratory of the Royal College of Science.

Mr. R. B. N. WALKER wished to draw attention to a paper recently published in the "Bulletin de la Société de Géographie de Paris,"[1] and entitled "Les Tentatives des Franciscans au Moyen Age pour pénétrer dans la Haute Ethiopie"; par F. Romanet du Caillaud. In this paper was a reference to a Spanish MS. of the fourteenth century, which was published at Madrid in 1877, under the title of "Libro del conosimiento de todos los reynos y tierras y señorios que son por el mundo"; being the recital of the travels of a Castilian Franciscan friar, who, in the fourteenth century, had journeyed throughout the then known world, not only in Africa, but in Asia and in Europe.

M. du Caillaud's version was as follows:—"It was from the Gulf of Guinea that this Castilian reached Christian Ethiopia. He first arrived in the pagan kingdom of Amenuan by a branch of a river which he calls Eufrates, but which he distinguishes from the Asian Euphrates. This African Euphrates must be the Niger." . . . "The pagan kingdom of Amenuan appears to be the same as the kingdom of Benin, which in the fifteenth and sixteenth centuries had, although idolatrous, say the Portuguese historians, relations of homage with a puissant Christian prince, bearing the name or title of *Ogane*, and who resided at the distance of twenty moons from Benin, in going towards the East."

In the following paragraph Prester John was mentioned.

Description of Plates.

PLATE XVII.

Fig. 1.—European going out shooting. He wears a round metal helmet with a feather at the back and a hood with vandyked collar, rising to his lower lip. He has on a short pleated kilt and short trousers. The fact that the toes are not represented leads one to suppose that he is meant to be wearing boots. He is armed with a matchlock and short sword, and is accompanied by a dog wearing a collar.

[1] Septième série, tome xvii, 2e Trimestre, 1896, p. 212.

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Fig. 2.—European wearing round helmet without feather, and ruff round neck. His jacket is single-breasted and appears to have points across the chest; the rest of his dress resembles that of Fig. 1. He holds a matchlock (?), the match being very distinct, and wears a sword with an elaborate guard.

Fig. 3.—European (?) of another type with long straight hair, but clean-shaven; he wears a round helmet and a ruff round his neck. The rest of his costume resembles that of Fig. 2, except that the kilt is longer. He is armed with a sword, and is shouldering a matchlock.

Fig. 4.—European (?) with long hair, conventionally treated, and round full beard. He wears a helmet with raised bosses and two feathers, and is armed with a sword, and what appears to be a pike. He has no ruff but otherwise is clothed like Figs. 2 and 3. In the left hand top corner is a small bust of a similar European, holding an indeterminate object. Below, at the left hand corner, is a complete figure holding a matchlock(?) and in the right-hand corner a bust of a European holding his hand to his mouth. The swords carried by the figures on these four panels are all different, and some seem to have a resemblance to Moorish as well as European types. Fig. 3 wears his sword slung across the shoulder like the natives (de Bry, c. 55).

Plate XVIII.

Fig. 1.—A god, or king considered as god. He wears a helmet-like headdress, with vertical top, recalling a Persian form. This is apparently covered with beadwork made of cylindrical coral beads. To the front are attached three larger beads or possibly some sort of charm. He wears a jacket covered with similar beadwork, from the lower border of which are suspended small human masks, possibly of cast metal, On his wrists are large [carved ivory] armlets. He wears the usual "beluku" or long loin-cloth, with guilloche border and covered with chased ornament, of which specimens are given in Plate XXII. He has broad anklets probably of coral beadwork, which were a sign of higher rank than necklaces.[1] A fish resembling a catfish, of a kind constantly repeated in both casts and carvings, issues from each of his sides, while in each hand he swings a leopard by the tail, after the fashion represented in Sassanian carvings.

Fig. 2.—A group of three persons dressed very similarly to Fig. 1. The central figure or god has both arms supported by kneeling attendants who wear the collars[2] and anklets which testify to their high rank. Instead of legs, his body terminates in two fish resembling those seen in Fig. 1, giving him a superficial resemblance to the gnostic figure Abraxas. Round his neck is a coral necklace, and to his girdle are suspended masks in the form of crocodiles' heads. At the bottom of the plaque are two leopards in curious perspective. The god is represented in various forms, and with various attributes. Compare Plate XXI.

Fig. 3.—Group of three figures, the central person seated on a cylindrical stool and holding an axelike object in the right hand. The two other figures are kneeling. All are dressed as before, but the central figure has five larger beads (?) on the front of his headdress. Above are two small busts of long-haired Europeans, wearing curious helmets or hats with feathers and three bosses. One holds a "manilla" in his right hand, the other is holding something to his mouth.

Fig. 4.—Group. In the centre a king or chief with elaborate headdress and necklace of coral and agate beadwork. He has long armlets, and the high coral anklets, and wears the long loin cloth. An attendant on each side holds a shield over his head as a mark of honour.[3] All three

[1] Burton in "Fraser's Magazine," 1863, p. 288.
[2] Burton, *loc. cit.*, p. 414.
[3] De Bry, "India Orientalis," Part VI, chap. 55.

figures have the tribal marks of the Bini, consisting of three vertical cicatrices over the eyebrow and long parallel scars down the body.[1] Between the two attendants and the king are two smaller figures, possibly boys, one of whom appears to be holding a drum in his hand.

PLATE XIX.

Fig. 1.—Verandah of a house with four standing figures, all with the cicatrices over the eyebrows and down the front of the body. None of these appear to represent very important persons, for they have neither the broad coral collar, nor the broad anklets. The mode of dressing the hair differs slightly, the two inner figures not having the long plaits terminating in [lumps of clay].

The same pair carry the characteristic shield, apparently of bamboo or other wattlework faced with a metal plate. In addition to necklaces they wear gorgets of leopards' teeth and the "beluku."

The nude outer figures may possibly represent the king's "cutlass boys," who, according to Burton,[2] appeared naked. They hold in their hands the circular fan made of hide which is in common use to the west of the lower Niger.

The roof does not appear to be covered with palm-leaf in the usual style, but rather suggests the use of tiles or shingles. The pillars are remarkable as being composed either of carved or cast figures superimposed, or of wood faced with metal plaques.

The three steps in the centre are in accordance with a statement in de Bry.[3] On the uppermost stand two cast-metal leopards, such as have been brought home by the expedition, and what appear to be two neolithic axe heads. Such axe heads seem to be represented on several of the cast objects, under circumstances which suggest that they were held in veneration. This supposition would be confirmed by a similar veneration for stone implements in other countries after the introduction of metal, but more especially by a case in point from Fernando Po.[4] The last and most important thing to notice is the snake fixed head downwards on the roof, to which allusion has already been made.[5]

Fig. 2.—A noble, riding side-saddle, after the fashion depicted in de Bry's plate.[6] The upper part of his body was bare, as was apparently usual in time of peace; and he wears the "beluku" and broad anklets. Round his brow are coral beads; and a feather projects from his head, which is dressed in one of the more familiar fashions: broad bracelets of carved ivory (?) adorn his wrists. Each arm is stretched out and supported by an attendant walking on either side, and wearing only a narrow necklace, but no anklets. Each of these attendants has an ornamental band "*en bandoulière*" across the right shoulder, with a long pendant down the left side, ending in a small bell. Their heads are partially shaved, and dressed in ridges with pig-tails. The horse, which is small and asinine in appearance, is led by another attendant and answers both to Burton's[7] description of the Yoruba pony and to

[1] De Bry, *loc. cit.*, Part VI, chap. 55, "Auch schneiden sie in ihrem Leib von der Achsel an bis ungefahr an die Weych . . . drey grosse lange Schnitt auf beyden Seyten . . . und halten dasselbe für eine grosse Tugendt, so zu ihrer Seligkeit dienlich"; and Burton, *loc. cit.*, 147, 410.

[2] In "Fraser," p. 414. De Bry says that all young people went naked until marriage.

[3] *Loc. cit.*, chap. 55.

[4] Hutchinson, "Impressions of West Africa," p. 192. London, 1858. The axe heads were in the custody of the king.

[5] See above, p. 6.

[6] De Bry, *loc. cit.*, c. 55, and Plate XXIII. In this chapter is a full description of the way in which Benin nobles rode to court.

[7] "Abeokuta," i., 61.

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de Bry's picture of the Benin horse.[1] The King of Benin seems to have sat astride of his horse. Possibly warriors did the same.

Fig. 3.—This elaborate group apparently represents a capture, a theme repeated upon other panels with a striking similarity of treatment. In all, the captive is astride of a small horse, and has his face marked with cicatrices or scars running from the bridge of the nose right across the cheek. These marks are not the Benin "blazon," and it seems probable that they point to a hostile nationality to commemorate the defeat of which these particular plaques were cast. If the countrymen of these captives fought on horseback, the reference may be to some people dwelling to the north of Benin, or possibly to the west, in the Yoruba country.

In the present instance the unfortunate prisoner is completely transfixed by a spear with a long leaf-shaped blade, of a type very frequently met with, and wears a basin-shaped helmet or hat.

The captor, who is bearded and wears a full panoply, with a headdress covered with bosses, and the square bell so often seen suspended round the neck of warriors or executioners, grasps his captive with one hand, while in the other he holds a sword shaped like a machete. Of the two other armed figures in the lower row, one shoulders, like a gun, two rods apparently bound together, forming an instrument or weapon which occurs on several other plaques. His headdress is covered with cowries, a fact which might be of importance in determining dates if it were certain that no cowries had found their way to Benin before they were imported by Europeans from the Maldive Islands. The companion figure in the lower row carries a spear and the usual shield.

In the upper row are three smaller figures, two of which seem to be musicians in the train of the captor, while the third, who is kneeling as a suppliant, is evidently a compatriot of the captive, for he has the same curious marks across the face. His helmet, or cloth head-piece with lateral flaps, is of a type worn by the principal captive on another plaque, and the same remark applies to the peculiar sword which he wears.

Fig. 4.—The three figures on this tablet wear peaked (metal) helmets, those on the outside with bosses and cheek-pieces, and broad collars or straps round their necks. Each holds in his left hand a pair of "manillas," or metal armlets of a horse-shoe shape, which became a currency on the Guinea Coast at an early date. De Bry states that before the arrival of the Europeans the natives had no currency, but were content with barter[2]—*meris bonorum permutationibus;* his statement, however, is perhaps open to question. "Manils of brasse and some of lead" are mentioned by Hakluyt as regular objects of exportation to West Africa in the second half of the sixteenth century, but it is as difficult for us to say whether these were of this peculiar "Celtic" shape as it is to determine the origin of their adoption in the African trade, or the precise period when they became a currency. A further point of interest raised by the question of currency is the comparative seniority of these *manillas* and cowries as forms of money. It is stated in Astley's Collection[3] that cowries were unknown in this part of the world until 1600 A.D., but this is perhaps contradicted in James Welsh's account of the voyage of Messrs. Bird and Newton to Benin

[1] De Bry, Latin edition, c. 55, p. 121, "Equi satis generosi, nostris tamen multo minores," "not much bigger than calves." (German edition.) The Latin translation, by Artus of Dantzig, does not always correspond exactly with the German.

[2] "Ind. Orientalis," Part VI, chap. 19.

[3] Vol. ii, p. 652.

in 1588 A.D., where the following sentence occurs:—"Their money is pretie white shels, for golde and silver we saw none."[1]

If points like these could be definitely settled we should be in possession of valuable evidence with regard to the date of the plaques in general, on so many of which manillas and cowries occur, the latter always in the form of ornament. It may be added that the frequent appearance of manillas in the hands of the long-haired foreigners would suggest their introduction from the part of the world from which those foreigners came.

The central figure has a helmet with bosses, but no peak; it is furnished with a large looped chin-strap. On his legs are narrow anklets, and in his right hand is a staff terminating at the upper end in a crocodile's head with a fish between the jaws—a *motif* which we meet with on other objects. Possibly this staff is a "king's stick" carried as a badge of authority as is the usage in other parts of West Africa.

PLATE XX.

Fig. 1.—A warrior, with curious mitre-shaped headdress, with a curl of hair protruding by the left ear. He also wears a horizontal band across the chest with pendants and bell. In his right hand are barbed spears, in his left a shield with a curved object which may represent some form of club.

It should be noted that the chased background of this plaque shows a variation on the usual quatrefoil design.

Fig. 2.—The central figure is here attired in what appears to be a feather dress, on the front of which, as also on the arms, snakes may be seen, invariably with the head downwards. Whenever the feather dresses occur these snakes are found, either singly, or intertwined like the snakes of a caduceus. This would suggest that the figures wearing such dresses held some particular office; possibly they are "Fetisseros" or "Fetishmen." The headdress with its long pendants is remarkable, as also are the broad chainlike anklets, which do not appear to be coral. The broad knife with loop at the butt seems to have had some ceremonial significance. (Burton, "Fraser," 281.)

The spears, one of which is held by two persons, are of a type already illustrated. The costume of the other figures presents few features which have not been already noted. They wear leopard skins and bands across their chests with bells depending from them, while on their necklaces and headdresses cowries may be remarked. One of the smaller figures holds a pair of "gong-gongs" chained together at the base.

Fig 3.—This figure is remarkable for the curious humped breast and for the long loose garment. The hump recurs on several plaques sometimes on persons nude to the waist, the sex being always male. It would seem to represent some malformation of a well-known and distinctive nature or to have been derived from some sort of corslet.

The hair appears to be made up with coral beads[2] and to be dressed in a ridge, recalling the Hawaiian helmet. In each corner of the plaque is a raised crescential object the meaning of which it is hard to determine, although it is found upon other objects besides the plaques. Under the crescent in the left hand top corner is a standing or walking figure of a straight-haired foreigner, holding a stick (?) in his right hand.

Fig. 4.—The man on the left in this group is wearing a cross on his breast. Unless we are disposed to accept the story about Ogané, we must assume that this fact gives us a *terminus a quo* in attempting to date these castings. For it seems probable that the idea of wearing a cross

[1] "Hakluyt," vol. ii, Part II, p. 127. London, 1599.

[2] Fawckner, "Narrative," p. 5.

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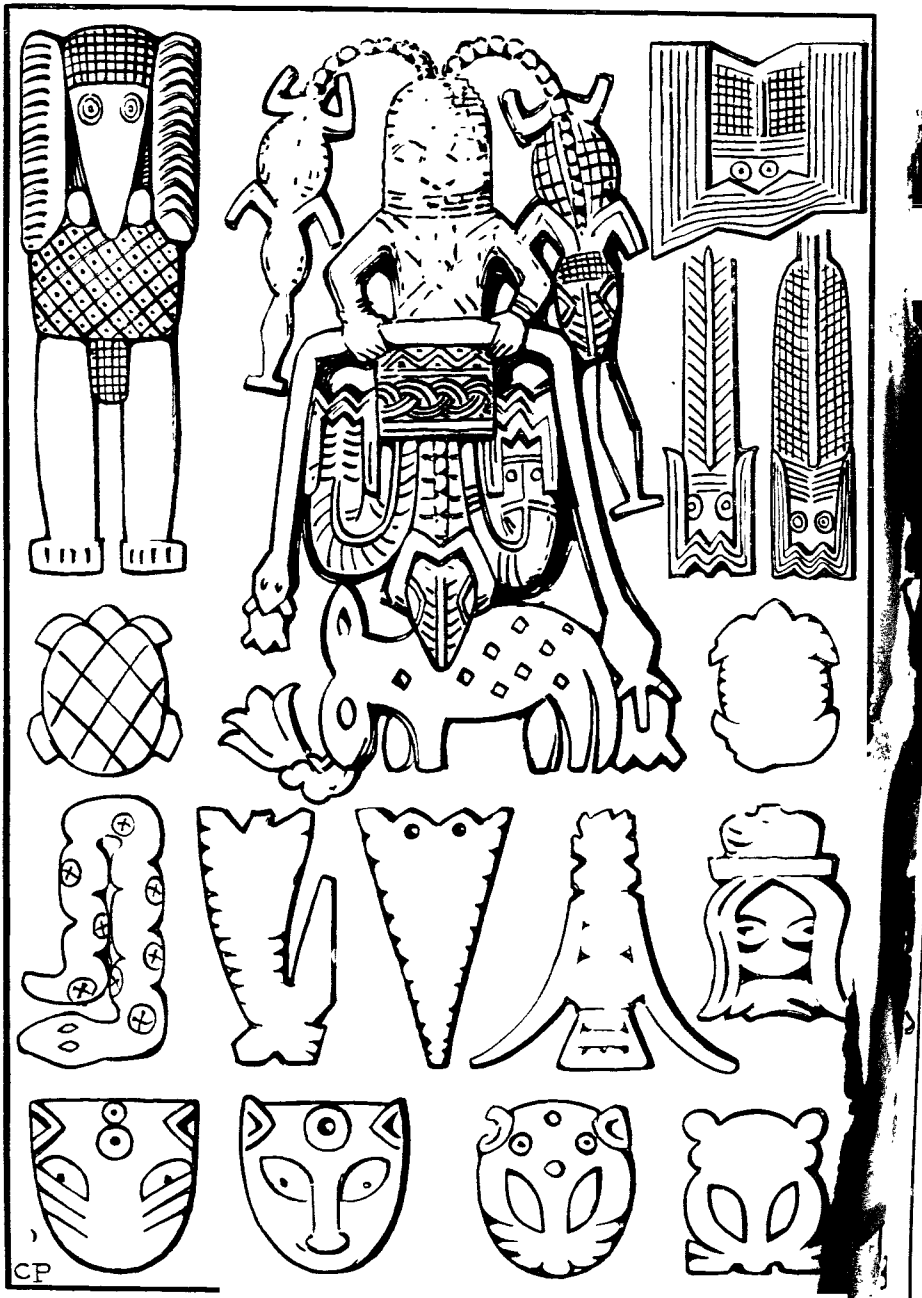






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in this way was suggested by the Portuguese usage. But on the other hand, as has been already remarked, the type of cross resembles that in use in the Eastern church. All the men wear broad anklets, and seem therefore to be persons of rank.

The central figure wears crossed bands of coral beads over the body, and a necklace of large beads, possibly of agate, round the neck. In his hand he carries a staff or wand, and at his left side is some kind of perpendicular ornament running right up the body, the nucleus of which may be the end of the "beluku" twisted up and provided with something to stiffen it. This peculiarity may frequently be observed elsewhere. Chased on the beluku itself are heads of long-haired men and other objects, probably inwoven in the original textiles.[1]

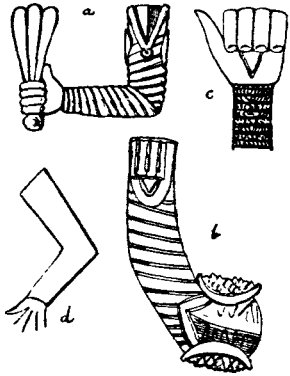
The ordinary cicatrices are visible in all the large figures, with the addition, in the central personage, of a raised mark between the eyes. Burton says of the Captain of War: "His forehead was adorned with a broad stripe of chalk from the hair to the nose-tip, and upon this was drawn a thin line of clotted blood from a goat freshly sacrificed."[2] Some such raised ornament may be indicated here. A brass mask in the British Museum has a piece of copper of just this shape inlaid in precisely the same place.

Of the three smaller figures, none of which have anklets, two wear collars of leopard's teeth, while the central person wears the broad coral collar. They all wear across the body ornamental "bandoliers."

Plate XXI.

Details from Ivory Carvings.

The top figure on the left represents a monster with a human body and elephant's head. The tusks appear on each side of the long triangular face, while the large ears are unmistakable. A less conventionalised elephant's head occurs in relief on a cast brass pedestal in the British Museum. The three objects in the top right-hand corner are variations of the fish which forms the legs of the bigger figure in the centre, and which may be a kind of catfish held sacred by the Jakris: all three are taken from carved tusks. The large central group, also from a tusk, represents the "god" with whom we have already made acquaintance, but more richly endowed with attributes. From his head issue two crocodiles, each devouring a fish; a third crocodile comes down between his legs, and has in its jaw a cow (?) or sheep, which is itself browsing upon a plant. Across his body the figure holds a long two-headed snake with a frog in each of its mouths. Snakes devouring frogs are found upon cast heads and masks. In the centre of the plate and on the right and left are two tortoises. (?)



In the upper of the two lower rows there is a snake on the left with conventionally represented scales. The two objects on the right, derived from carved ivory armlets, seem to represent conventionalised heads of the long-haired people already familiar from Plate XVII, Figs. 3 and 4. Of the two other figures, that on the left may be intended for an arm holding a knife, for detached arms and hands occur with comparative frequency both on metal and ivory, probably with a symbolic significance.[3] It seems probable that the form given in Fig. *d*, may be a component part of some of the conventional patterns.

The accompanying small cuts illustrate this

[1] See Plate XXII.

[2] In "Fraser," 1863, p. 286.

[3] In "Fraser," 1863, p. 279.

point. *a* and *c* are found on the base of a brass pedestal: *b* occurs on a tusk: *d* is frequently chased on the garments of the figures on the plaques. It seems to be meant for an arm; but the fingers often disappear leaving it almost crescent shape.

The hand in *b* and *c* is clasped upon some small object, and the general appearance of *c* suggests that of the little amulets used in South Europe against the evil eye and carried by the Spaniards to South America. The triangular object in the centre of this row might conceivably bear some relation to the elephant's head above; but this is a mere conjecture, for which there is no satisfactory evidence.

In the lowest row are four different versions of a leopard's head.

PLATE XXII.

Details of Chased Ornament.

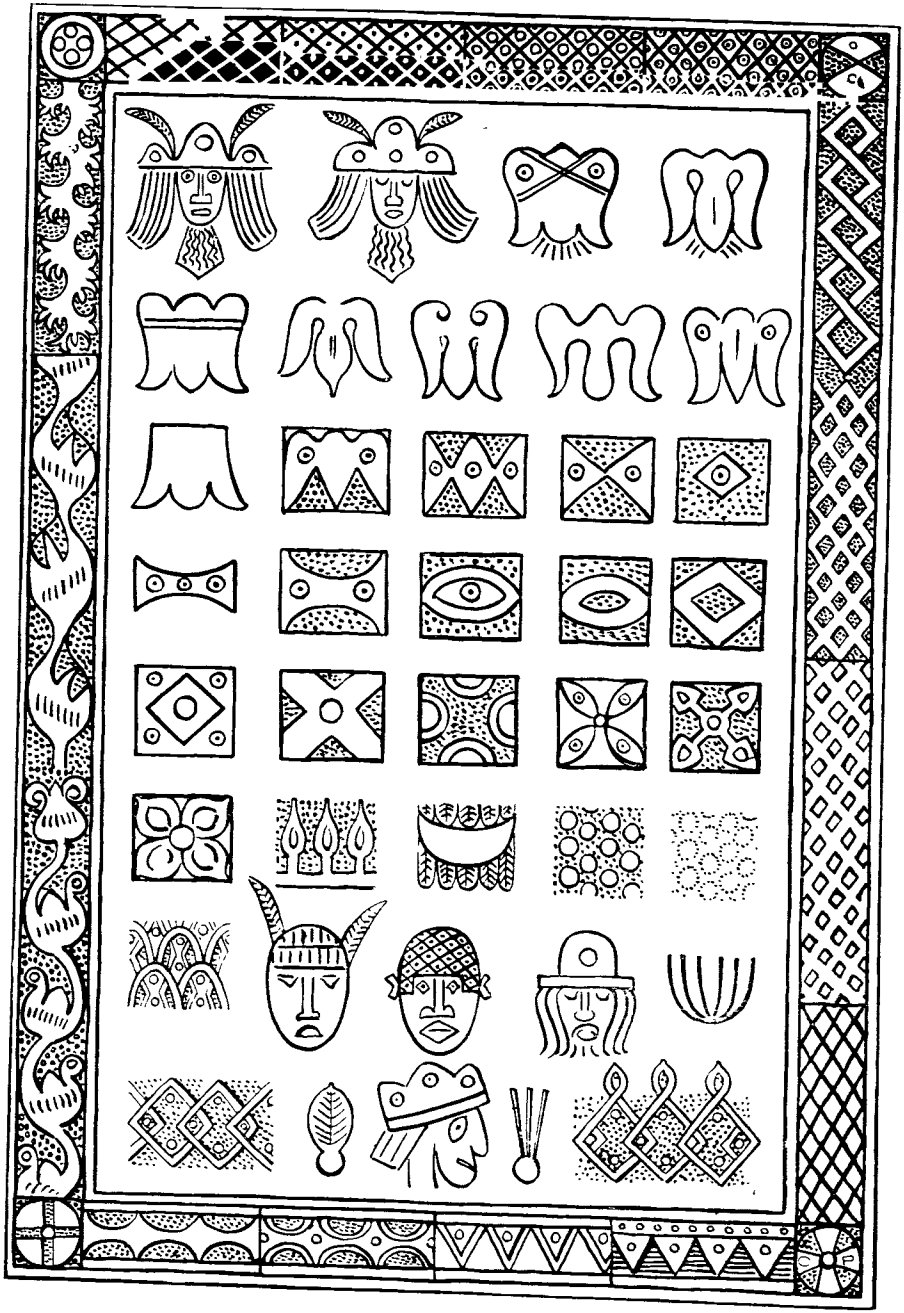
This plate presents various details of the ornaments found chased upon the plaques or executed in *repoussé* work on brass plates. Many of these seem to illustrate a continuous process of degradation or conventionalisation. This may be more especially remarked in the upper rows. The human head with long hair, together with a detached arm (see cut *d*) is nearly always found engraved on the *belukus* or loin-cloths. The conventional treatment of the leopard's skin may be noticed to the right of the third row from the bottom; and in the bottom row to the left of the central head is a leopard's ear with its curious leaf-like treatment, while on the right is one of his "whiskers."

A native head, like one of those in the second row from the bottom, is usually found on the *belukus* in addition to a head of the long-haired type.

Of the various designs represented in the border, the most interesting are those on the left hand side. In the central section the artificer has left traces of his method of work, the transverse lines running across the tops of the "petals" having been first incised, and two triangles being subsequently drawn upon them and filled in by punching. It may be added that the sequence of many of the details within the plate is of course very far from being complete or final.



HEAD OF A GIRL CAST IN BRONZE.



A Quinary System *of* Notation *employed in* Luchu *on the* Wooden Tallies *termed* Shō-Chū-Ma.

By Professor Basil Hall Chamberlain.

[with plates xxiii-xxiv.]

I.

A brief mention of these wooden tallies, together with the representation of a single specimen, will be found in the "Geographical Journal," for June, 1895. But as the system of counting employed in them has never yet been analysed or described in any language—not even in native Luchuan itself, or in Japanese—I venture to revert to the subject, and to submit to your consideration fac-similes of six specimens preserved in the Anthropological Institute of the Science College of the Imperial University of Japan, the fac-similes having been executed by kind permission of the Curator, Professor Tsuboi Shōgorō. The larger figures are alone original, the smaller ones being a Japanese (Chinese) interpretation added afterwards.

It will be noticed that these tallies vary from $11\frac{1}{2}$ inches to $2\frac{1}{2}$ feet in length, with a breadth of from 1 to $1\frac{1}{2}$ inch, and that some are thin and flat, presenting only two surfaces for inscription, while others admit of the four sides being written on. All are quite rude in workmanship. Till recently, such tallies were much employed in the rural districts of Luchu, more especially as records of matters referring to the assessment of taxes both in money and kind, each item being inscribed on the tally with charcoal, or any other convenient material that came to hand. The custom may be traced to a hearsay knowledge of the Chinese written character among the Luchuan peasantry, who, not possessing sufficient learning to employ this character itself, and not being encouraged by their rulers to acquire the elements of an education deemed unsuitable to their lowly station, developed a make-shift of their own. One result of this origin has been to keep the *Shō-chū-ma* out of sight; for the learned despised such an imperfect system of records, and the villagers themselves felt more or less ashamed of perforce resorting to it. At the present day, when the schoolmaster is abroad in Luchu, as elsewhere, scarcely any native can be brought to speak of the subject, or to exhibit any specimens he may possess for fear of being laughed at as behind the age.

II. THE MONEY COUNT (Pl. XXIII, A. 1, 3; B. 1. Pl. XXIV, D. 4, and F).

The symbols inscribed on the *Shō-chū-ma* tallies fall into two widely divergent categories, viz., *numerals*, and *signs* for people's names. We will treat first of the numerals, which are arranged on a quinary basis, and are differentiated according to the material that has to be counted. Rice, firewood, and money are the three materials that occur. Anciently Luchu had no coinage, and all tribute was in kind; but from the middle ages Chinese coins began to filter in, and after the Japanese conquest in the seventeenth century, Japanese copper cash obtained a limited circulation in the archipelago, or, at least in the chief island—historic facts that have recorded themselves in the symbol ◎ for "money," a representation of the Chinese and Japanese bronze or copper cash with a square hole in the middle for stringing. A thousand cash (*mung*[1]) make one string (*kwang*[2]), and the sums that present themselves for counting assume such forms as 9 *kwang*, 50 *mung*, 32 *kwang*, 950 *mung*, 2 *kwang*, 300 *mung*, etc., 50 *mung* being the lowest value that occurs. The table on p. 385 shows the numeral signs employed in the Money Count.

Putting aside the lines 一, 二, 三, for 1, 2, and 3, as the common property of all nations, the only numeral here apparently borrowed from the Chinese is 十, the symbol for 10. The system followed up to 4 inclusive consists in having dots for one column, horizontal lines for another, horizontal and vertical lines combined for another, and a circle as the foundation form of another. With 5, in each case, we encounter a totally new form, which serves as the basis for 6, 7, 8, and 9. Some of the forms of 5 have probably been obtained by halving 十, the figure for 10. Compare, for instance, 十 with 𠂆, 𠃌, and 丁 (found in the compound 𠄌 or 𠄎, signifying 7). That halving is resorted to in other cases appears from tally F (Pl. XXIV), to be discussed later on.

[1] Written with the Chinese character 文, pronounced *mon* by the Japanese.

[2] Written with the Chinese character 貫, pronounced *kwan* by the Japanese.

	Hundreds of *Kwang.*	Tens of *Kwang.*	Units of *Kwang.*	Hundreds of *Mung.*	Tens of *Mung.*
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

The above table has been deduced from an examination of tally A (Pl. XXIII), which comes from the district of Kushi in Northern Luchu, some 45 miles from Nafa. The other tallies B and D, from Chimu in Central Luchu, about 30 miles from Nafa, present local variations affecting the form though not the system.

Thus, we find in these latter, the sign for 50 cash rounded,  (instead of). More divergent still is  for in the 100 column of *mung*, with  ,  , etc., instead of ,  , etc. Again, the unit column of *kwang* has vertical instead of horizontal lines; for instance 1 is , 2 is  , etc., up to 4 inclusive, while 5 is (but also ), 6 is , etc. In the 10 column of *kwang* we find 5 represented by  and , and 100 *kwang* is written  instead of  . Such numerous dialectical variations, if one may so phrase it, within a distance of less than 20 miles, show the isolation in which each village lived out its life.

Before leaving the Money Count, it will be advantageous to present some concrete instances of this method of recording numbers, as the combinations are not always clear at first sight, especially in the ten and unit columns of the *kwang*:—

 means 27 *kwang*, 100 *mung*. Analysis: is 20, the added horizontal line  brings it up to 25, and the two lines below make 27 *kwang*. The dot is 100 *mung*.

 means 63 *kwang*, 50 *mung*. Analysis:  is 50, to which add meaning 10, thus making 60, and  , 3, making 63 *kwang*. The 50 *mung* is regularly represented by  .


means 25 *kwang*, 300 *mung*. Analysis:  , 20, to which add a lower horizontal line joined on by a ligature to the upper part of the complex figure, and 25 is obtained. That the lowest line is not actually horizontal, but dashed up towards the right, imitates a common feature of Chinese caligraphy. The three dots regularly represent each 100 *mung*, hence 300 *mung* altogether.


means 352 *kwang*, 250 *mung*, each of the elements 300, 50, 2, 200, and 50 being distinctly written, as will be seen by reference to the table.


means 36 *kwang*, 550 *mung*. Analysis:  is 30, which prolong to to make 35, and add  below, making 36.  is the regular symbol for 500 *mung*, and for 50 *mung*, the distinction between the two being emphasised by the difference of size.


means 73 *kwang*, 300 *mung*. Analysis:  is 50 *kwang*, 20 *kwang* more, making 70, and  3 more, making 73 in all. The three dots are 300 *mung*.


means 32 *kwang*, 950 *mung*. Analysis:  is 30 *kwang*, to which add  , making 32. is 500 *mung*, and each dot inside it is 100 more, making 900 *mung*, while  , as usual, is 50 *mung*.

These instances should render the system tolerably clear.

III. THE FIREWOOD COUNT (Pl. XXIII, B. 2; Pl. XXIV, D. 1).

This count has four columns, viz., units, tens, hundreds, and thousands (of bundles):—

	Thousands.	Hundreds.	Tens.	Units.
1				
2				
3				
4				
5				
6				
7				
8				
9				

This Count, closely similar to the Money Count, shows us the figure , 1,000, formed from  , 100, by the insertion of a dot, and such interesting combinations as , 900 bundles; , 90 bundles; , 75 bundles; , 315 bundles, etc.

IV. The Rice Count (Pl. XXIII, B. 3 and C; and Pl. XXIV, D. 2).

Premising that—

1 *to*	contains	10 *shō*	of grain measure.[1]
1 *shō*	„	10 *gō*	
1 *gō*	„	10 *shaku*	
1 *shaku*	„	10 *sai*	

We here again find the number 5 playing the leading part. Beginning with the lowest denomination, the analysis of this Count is as follows:—

5 *sai* is written  .

5 *shaku* is written  .

smaller values of either being represented by dots below, for instance, 7 *shaku*, 5 *sai*, written  .

5 *gō* is written , smaller values of this row also being represented by dots, thus  for 6 *gō*. It thus comes naturally to pass that the important value 1 *shō* is denoted by means of two vertical lines, thus  , appended dots serving as before to express any smaller values, thus:—

 is 1 *shō*, 1 *gō*.

 „ 1 *shō*, 5 *gō*.

 „ 2 *shō*.

 „ 2 *shō*, 2 *gō*, etc.

In accordance with the essentially quinary nature of the system, there exists a special figure for the value of 5 times 5

[1] Being uncertain of the Luchuan pronunciation of these names of measures, I have employed the Japanese. In Japan, 1 *to* contains a little less than one-quarter of an Imperial bushel. Of the contents of the Luchuan *to* I am ignorant; but we may safely predict that it was a varying quantity, differing from village to village.

gō, viz.: , which thus represents 25 *gō*, in other words $2\frac{1}{2}$ *shō*. Its compounds proceed quite regularly, for instance—

 literally $2\frac{1}{2}$ *shō* + 5 *gō* = 3 *shō*.

 literally $2\frac{1}{2}$ *shō* + (4 × 5 *gō*) = $4\frac{1}{2}$ *shō*.

The next sign to notice is , representing 5 *shō*. The figure  may serve as an example of a compound. It is literally 5 *shō* + (2 × 5 *gō*) = 6 *shō*.

The next higher sign, proceeding always according to the quinary method, is or , formed by compounding and compressing (5 *shō*) and ($2\frac{1}{2}$ *shō*). It thus signifies $7\frac{1}{2}$ *shō*. The figure  occurs as a regular compound of this last to signify 8 *shō*.

One *to*, being equivalent to twice 5 *shō*, is represented by , a contraction of doubled, and on the same principle $1\frac{1}{2}$ *to* (= 15 *shō*) is written , that is trebled. One *to*, $2\frac{1}{2}$ *shō* is denoted by the sign , corresponding regularly to which signifies $7\frac{1}{2}$ *shō*, as stated above.  signifying 1 *to* $5\frac{1}{2}$ *shō*, and signifying 1 *to* 3 *shō*, may serve as examples of compound forms.

An auxiliary feature of the system followed in the Rice Count is the horizontal line sometimes employed to separate one decimal value from another, as:—

 $2\frac{1}{2}$ *shō*, 5 *shaku*, where the upper symbol represents $2\frac{1}{2}$ *shō*, the lower 5 *shaku*.

 signifying 1 *shō*, 3 *gō*, 2 *shaku*, 5 *sai*.

 signifying 1 *shō*, 2 *gō*, 7 *shaku*. The object in employing this line not as a division between two items, but at the end of all, recalls our European practice in proof-reading, where each correction as made, is followed by a stroke, whether any other correction immediately follow or not.

We may safely conclude the Japanese interpretation to be erroneous in two cases which frequently contradict the rules deduced from a careful study of all the rest. Thus  must be 2 *shō*, 3 *gō*, not 2 *shō* 2 *gō*, as given in the Japanese marginal annotation; and  must be 2 *shō*, not 2 *shō*, 2 *gō*, as in ditto. Such mistakes might easily be committed by neglecting or miscounting the small dots. All persons who have corrected proof-sheets know how much more frequently errors are made in figures than in ordinary writing. Moreover, the Japanese text has other undoubted errors, errors in Luchuan proper names, as *Magari* for *Agai* (the Luchuan for "East") in more than one place, and others.

V. Miscellaneous.

Tally C (Pl. XXIII), to which no village name is appended, differs from the others of the Rice Count, resembling rather the Money Count in form. Instead of a variety of entries, one side enumerates the units of each value—is, in fact, a table of reference—the other represents one concrete sum. The units in each row of figures are:—

 100 *byō* (bags) of rice.

 10 „ „ „ „

 1 „ „ „ „

 1 *to* ($\frac{1}{10}$ bag) of rice.

 1 *shō* ($\frac{1}{100}$ bag) „ „

 1 *gō* ($\frac{1}{1000}$ bag) „ „

 5 *shaku* ($\frac{5}{10000}$ bag) „ „

The special sum inscribed on the other side by aid of these values is:—

80 
4 
2 
7 
6 
5 
3 
5

signifying 84 bags, 2 *to*, 7 *shō*, 6 *gō*, 8 *shaku*, 5 *sai*. Observe the manner in which ⊕, 100, is halved in the topmost figure to represent 50, to which ⊙, 30 (⊙ signifying 10), is added to make 80. Notice, too, the use of  to signify two different values, viz. 5 *shaku* (part of the complex number  , 8 *shaku*) and also 5 *sai*, the next lower place of decimals.

Tally F (Pl. XXIV), similarly without indication of origin, but probably from the same locality as Tally C, closely resembles the latter. It belongs to the Money Count series. The standards of value inscribed on one side are:—

 10,000 *kwang*.

 1,000 „

 100 „

 10 „

 1 „

 100 *mung*.

 50 „

and the particular sum inscribed on the other side is :—



i.e., 8,786 *kwang*, 750 *mung*. Observe the halving of ⊕, 10,000, to represent 5,000, and of ⊕, 100, to represent 50. The other numbers will be easily read by comparing the analysis given under the Money Count.

Tally E (Pl. XXIV), is difficult of interpretation, because lacking all indication of the material meant to be counted. But the system is the same as that employed, with variations, in the examples already cited. Though no Japanese key has been added to it, the peasant writer has himself been at the pains to repeat most of his figures in rude Chinese as well as in native form, thus supplying a partial key. We thus learn, for instance, that  is 7,  9 (consequently 5 must be), for some kind of unit, while  is 7, and 9 for some other kind of unit. Four appears variously, as , (perhaps miswritten), and  . Sometimes the peasant writer forgets his Chinese or misapprehends it, and explains one of his rustic figures by another. Thus in one place  is given as 6 (Chinese 六); in another it is explained by the rustic symbol  , 6 being sometimes thus represented, as shown above. European readers examining the fac-similes must not be led by a vague resemblance in certain cases to credit the peasant writer with a knowledge of the Arabic

numerals. His sign 12 does not mean 12; it is simply a carelessly formed 四, the Chinese for 4.

VI. ARBITRARY SYMBOLS (Pl. XXIII, A. 2 and 4; B. 2. Pl. XXIV, D. 1).

In addition to the numerals there appear on some of the tallies, other signs written below the numeral in each compartment, and explained in the Japanese annotation by the name of some house or householder. We may conclude the figure to indicate his quantum of assessment. It has been found impossible to reduce the signs to any system, either phonetic or ideographic. They are evidently arbitrary symbols or badges, adopted for distinction's sake by villagers ignorant of the art of writing, thus[1]

1  represents the name Mē-mī-ya.

2  „ „ „ Nāka-michi.

3  „ „ „ Shin-zatu-gwā.

4  „ „ „ Shin-zatu.

5  „ „ „ Shin-yā.

6  „ „ „ Tō-ma.

7  „ „ „ Matsu-jō-gwā.

8  „ „ „ Agari-jō-gwā.

9  „ „ „ Mī-jō.

10  „ „ „ Mē-tēra-yā.

11  „ „ „ Mura-yushi.

12  „ „ „ Jin-den-nē-gwā (?)

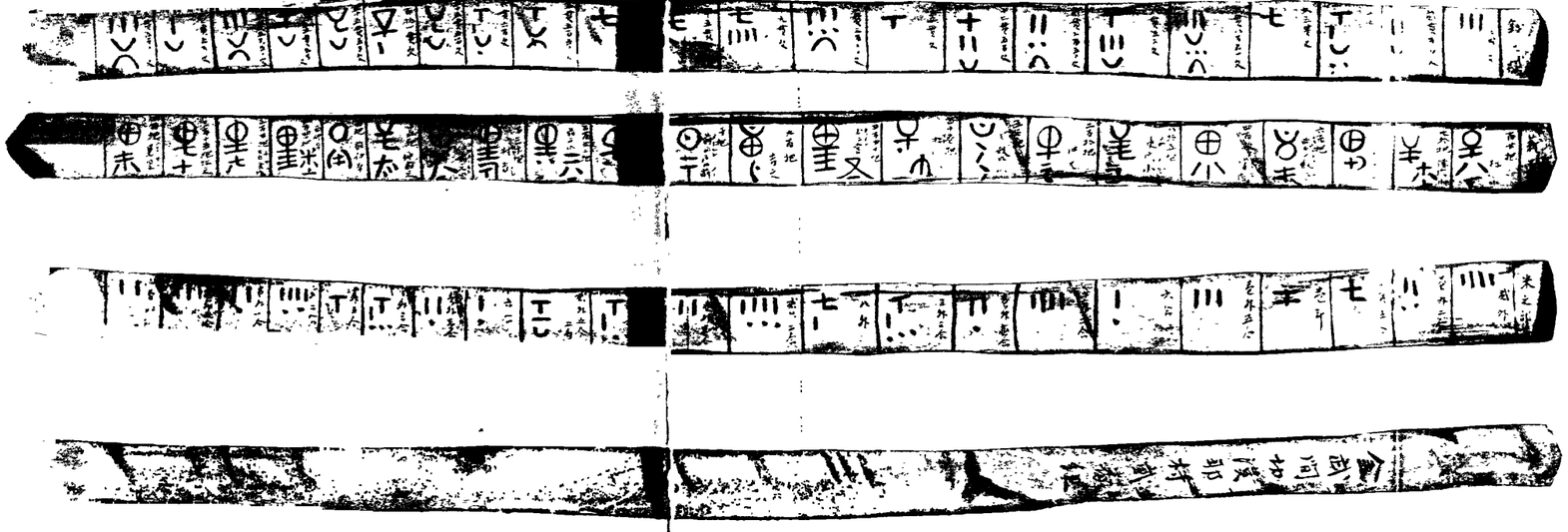
13  „ „ „ Naka-mutu-gwā, etc., etc.

[1] I re-spell and amend, where necessary, the Japanese annotation, which is often incorrect.

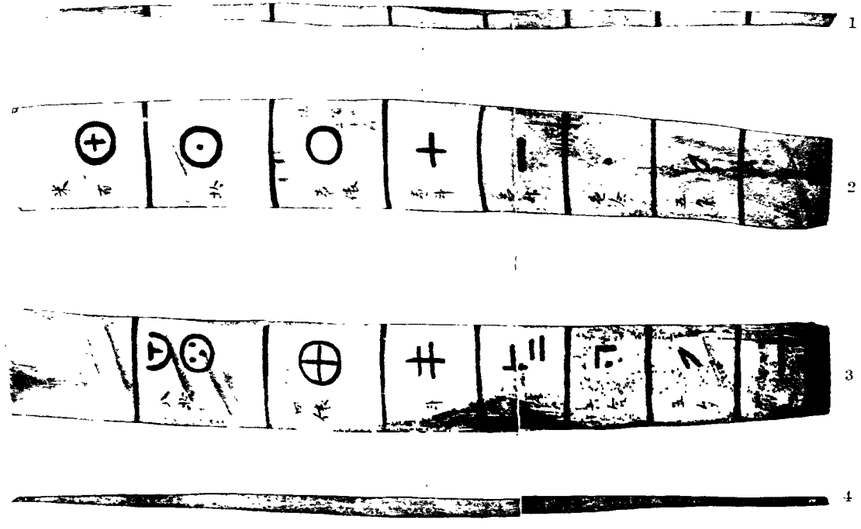
A.

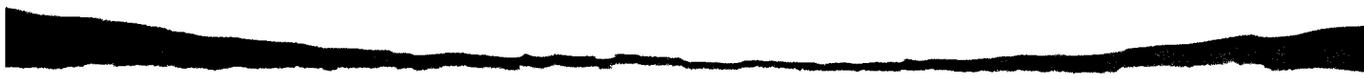


B.

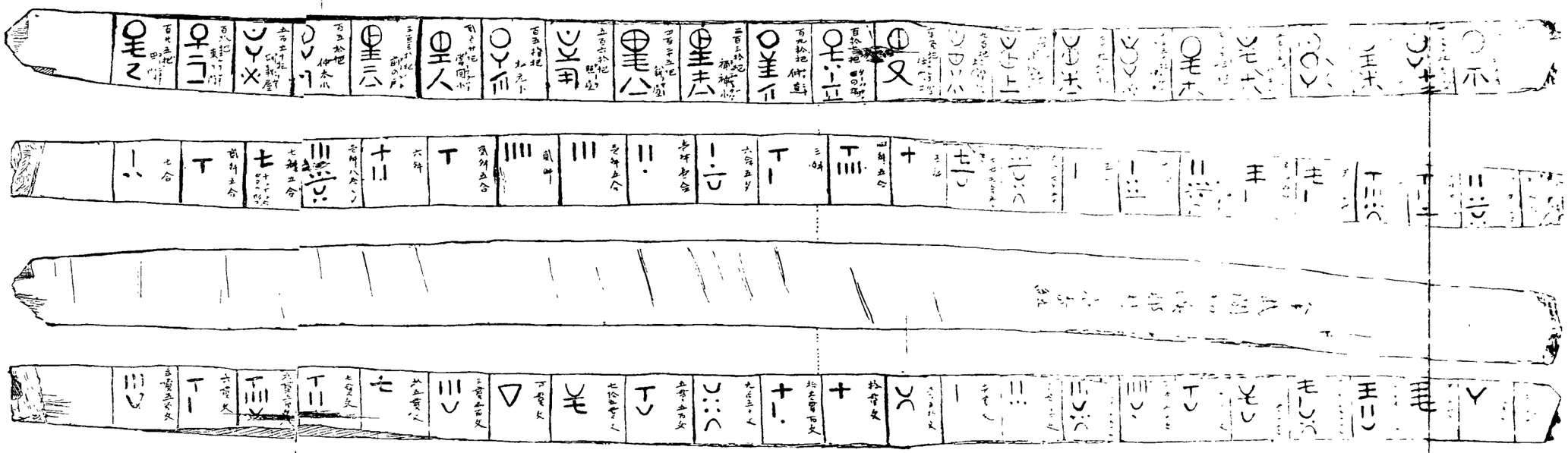


C.





D.



E.

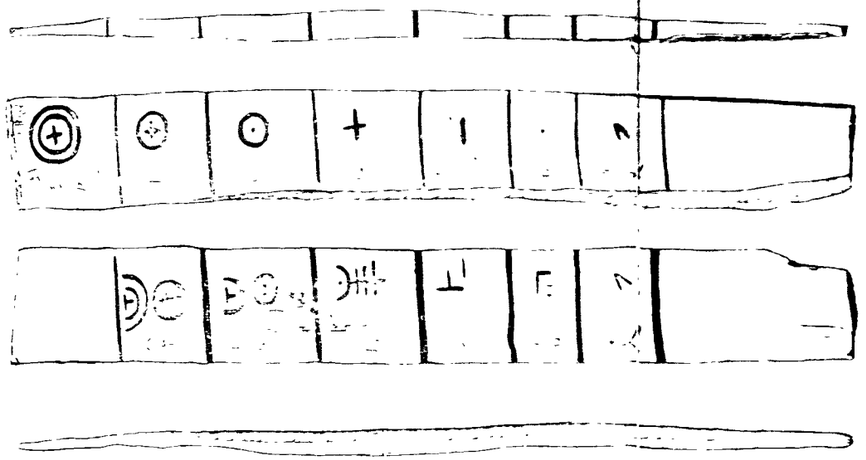
1

2

3

4







All that can be said in elucidation is that certain vague analogies tend to make themselves felt. Compare, for instance, Nos. 3 and 4 above. The word *gwā*, "little," "lesser," seems to be often represented by a horizontal stroke; but this is not the necessary and exclusive meaning of that stroke (see, for instance, No. 5). No, these symbols are purely arbitrary in essence, though, when neighbouring householders happened to have similar names, they naturally followed the line of least resistance, and indicated these similar names by similar signs; thus,  already existing as the sign for Shin-zatu, the earliest way of representing Shin-zatu-gwā (literally, "Shin-zatu the lesser") was to add a stroke and write  .

The symbol is a Chinese character (meaning "rice"), as are a few others, for instance  , , ; but they are employed without the slightest reference to their original signification, or even to their sound, whether in Luchuan, Chinese, or Japanese. They seem merely to have been used because their shapes were familiar to the eye. These symbols thus differ radically from the system in vogue on the Luchuan islet of Yonakuni, which is pictorial and ideographic so far as it goes.[1] They also stand behind the so-called *Ya-jirushi* of Japan,[2] which latter, though partly arbitrary, run in certain well-defined grooves more or less pictorial and ideographic in their nature, and testify to a greater expenditure of thought.

NOVEMBER 23RD, 1897.

E. W. BRABROOK, Esq., C.B., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

Mr. J. STANLEY GARDINER then read his paper on "The Natives of Rotuma," and a discussion was taken part in by the PRESIDENT, Mr. S. H. RAY, Mr. G. L. GOMME, and Dr. GARSON, after which a vote of thanks was passed to Mr. GARDINER for his paper, and for the collection of objects from Rotuma which he exhibited.

[1] See the "Geographical Journal" for June, 1895. p. 537.
[2] See "Transactions of the Asiatic Society of Japan," vol. xv, p. 50.

The Natives *of* Rotuma.

By J. Stanley Gardiner, B.A., Gonville and Caius College, Cambridge. (Communicated by Professor Alexander Macalister, M.A., F.R.S.)

Introduction.

[with plate xxv.]

After the return of the "Coral Boring Expedition" from Funafuti to Fiji, I went in H.M.S. "Penguin," by kind permission of Captain Field, to Rotuma, an island about 280 miles north by east of Viti Levu, Fiji. Here I spent three and a half months, studying the fauna of the island and of the waters adjacent to it. For some weeks I was incapacitated from active work in this direction, and spent the time in collecting the materials, incorporated in this paper. The result, though very incomplete in many ways, will, I hope, be of some interest.

I must, in the first place, express my very great thanks to the Hon. James Stewart, Colonial Secretary of Fiji, for his kindly interest and assistance during the whole time that I was in the South Pacific. My work was made much easier, too, by the interest which Mr. Leefe, Resident Commissioner of Rotuma, took in its progress, and by his ready help at all times. He further recommended me in such a way to the chiefs of the island that I was able to obtain their willing co-operation and help. I am under especial obligations to my friend Marafu, the chief of Noatau, who was undoubtedly the most influential native on the island. At all times I found that he took a great and most intelligent interest in my progress, and was only too ready to give me all the help in his power. Marafu's knowledge of English, too, was greater than that of the interpreter, or any other native I met on the island, although he was extremely diffident of speaking it before a third party. To many of my questions he would defer an answer, until he had consulted the old men about them. Marafu had himself been the *sou* (Sec. XIV), and alone seemed to know anything about the higher meanings of the old religious rites. It is with deep regret that I have heard, since most of this paper was completed, of Marafu's death, on April 20th, 1897; his age was about 65 years. Of Marafu's character I can only say that I always found him a "very white white-man." I was also greatly assisted by Albert, who was for over twenty years the chief of Itoteu, and by Titopu, or Friday, the interpreter, who took the greatest

trouble in investigating various points for me and in his translations of the different legends, etc. Of Friday's patience and good temper I cannot speak too highly. I further received considerable assistance from Father Chevreul, of the "Société de Marie," the late Mr. George Peat, and several other white residents in Rotuma.

Since my return to England, I have been greatly assisted by the advice of Baron A. von Hugel, who has kindly looked through a few sections of this paper, and who has arranged the Plates. I am also indebted to Professor Macalister for his advice and encouragement, without which I do not think I should have ventured to put together my materials at all. I have handed over to Professor Macalister a small collection of crania and bones from Rotuma, which I hope may prove of some interest.

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I. Discovery and Historical.
II. Early Canoe Voyagers.
III. Physical and Moral Characteristics.
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VII. The *Kava* Ceremonial.
VIII. Hooks, Nets, and Fishing.
IX. Districts and their Government.
X. Graveyards.
XI. Houses and their Foundations.
XII. Canoes and Drum.
XIII. Stone and Shell Axes.
XIV. The *Sou* and his Officers.
XV. Religion.
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XVIII. Marriage.
XIX. Tenure of Land.
XX. Sports, Games, and Toys.
XXI. Singing and Dancing.
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XXIII. Decrease of the Native Population.
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XXV. Legends.

Appendix I. List of the Last Sixty *Sou*.
„ II. Language.

I. DISCOVERY AND HISTORICAL.

Rotuma is stated in all directories to have been discovered by Captain Edwards, of H.M.S. "Pandora," in his search for the mutineers of the "Bounty" in 1791.

According to native accounts, they always knew white people, but the first one to visit the island was "Kookee." Of course this is impossible, but probably he was the first white man they ever heard of by name. Two ships, or according to other accounts one, visited the island under Rourivo; the ships were called the *vaka atua*, or devil-ships, and the sailors *atua*, from the fact that they were dressed in white above and black below. They were also called *arere*, or fire-eaters, from their smoking habits; their flag is said to have been red. Some of the people

went on board to steal, but were fired on by what they termed the *pis bobo*, some sort of cannon. They are supposed to have taken away three people with them to sacrifice to their gods; another account puts the number at one, who subsequently returned. Where they first landed is doubtful. One account given me gave the extreme west end of the island, while another gave Malaha, in the middle of the north side. My impression was that there were two stories, and this was confirmed by Marafu telling me that the visit to Malaha, evidently of the "Pandora," was true, but that the other was an old legend, which he had heard the old people allude to, when he was a boy, about the *atua* coming in great houses on the water, and on leaving them destroying their island by sickness, and, when they tried to escape from the island, drowning them in the sea. I could not get the story properly confirmed or related to me, but I have no doubt of its former existence.

Quiros[1] in his first voyage (1606) kept as far as possible about lat. 11° S. He mentions an island called Taumaco, 1,940 leagues from Lima and 60 leagues from Tucopia, the next island visited. There was little wind, and they lay to till the following morning, when, the ships being to the north of the land, the boats "went to the south-west towards the middle of some small islands which form a channel, which islands at a distance appear like one. Finding a secure port close to the small islands, which are separated from the great island to the east, the armada anchored in 25 fathoms." "At a small distance from the ship was a small islet" situated within the reefs "upon which the natives with much labour had formed a platform a full fathom above the level of the sea." "On it were about seventy houses, which stood among palm trees." Torres describes it as "a town surrounded by a wall, with only one entrance, and without a gate." He then mentions how he went to this island and made dispositions to invest it, on which the chief, with a bow in his hand for a staff, stepped into the water and made signs that his people were in great dread of the muskets. Previous to this, however, boats had been sent on shore and had brought back water, vegetables, etc., but by what means they obtained them is not related.

"Taumaco was inhabited by people of different kinds. Some were of a light copper colour, with long hair; some were mulattoes; and some black, with short, frizzled hair. They all had beards. In their wars they made use of bows and arrows. They were good navigators, and had large sailing canoes, in which they made voyages to other lands." "The natives had

[1] "Voyages and Discoveries in the South Sea," J. Burney, Part II, pp. 287 *et seq.*

hogs and fowls, and the sea supplied them with fish in plenty." The name of the chief was Tumay (Quiros) or Tomai (Torres), a sensible man of good presence, in complexion somewhat brown, with good eyes, nose sharp, beard and hair long and curled, and grave demeanour. To Quiros he gave a list of sixty islands, which they visited. Four men were seized to act as guides and interpreters, and when the chief came off to remonstrate a great gun was fired, not loaded with shot (?). One prisoner jumped overboard the next day, and two off Tucopia, or Chucupia, which was reached on a S.S.E. course in three days. Quiros in his narrative leaves it to be inferred that the same course, due west, was continued. The fourth prisoner was a slave from an island named Chicayana. The people of Tucopia are described as being precisely similar to those of Taumaco in appearance.

Taumaco seems to me to correspond better with Rotuma than any other island in these seas. It is visible at a distance of 35 miles, and might well be seen on the south tack on a course, such as Quiros was sailing. Taumaco is identified usually with the Duff, or Wilson group, north-east of the Santa Cruz group, but a large island to the east and small islands to the west are specifically spoken of, and do not there exist. This group, too, should properly have been sighted to the north, and is almost in sight of the rest of the Santa Cruz group, so that, with the information they obtained from the islanders, they would be naturally expected to keep straight on there. The whole point of their voyage was to keep on one parallel of latitude, so as not to miss the Santa Cruz group; and to suddenly change the course to S.S.E., as Torres alone says, seems to be out of the question. The size is given as 6 leagues long, or 8 to 9 in circuit; no island in the Duff group is more than 2 miles across, while Rotuma is over 8 miles long, so that there, too, it corresponds better. The legend previously referred to points to some early voyagers, and the account by Quiros of the island of Taumaco quite agrees with Rotuma. There is now no islet on the reef to correspond, but it is quite possible that one such existed off Losa of ash-rock and has since been washed away, as there are other ash-rock islands on the reef in which this process is now rapidly taking place.

The account of the voyage of Lemaire and Schouten (1616) makes the king of Solitary Island much struck with their white shirts and black lower garments, so that probably any other islanders would be equally struck by the same in any white man. I think there is no doubt but that Solitary Island is Fortuna; it has no point of resemblance in any way to Rotuma.

After the "Pandora" left, the island was visited by Captain James Wilson,[1] in the missionary vessel "Duff," in 1797. He was followed by several trading vessels in the next twenty years, but none of them left any account of its people. Then came the visit of Duperrey and Chramtschenko in 1822. In their atlas[2] is a plate to show the physical characters of the people and their mode of dress.

In his search for La Perouse's expedition, Captain Peter Dillon touched here on September 1st, 1827, after having visited the Tongan islands. He appears to have got most of his information from a beachcomber, and writes as follows[3]:—

"This island is divided into six districts, each ruled by its own chief. These meet in congress every six months, when they elect a president and deliberate upon state affairs, hearing and settling grievances without having recourse to arms. Thus intestine broils seldom occur, and when they are inevitable are not very sanguinary. Parker, who has been upon the island about four years, estimates that during that period not more than forty lives have been lost in battle. It sometimes happens that the president does not wish to resign his post at the expiration of six months, when, rather than quarrel, they allow him to exceed the time appointed by law; but should he persist in a further maintenance of his power, the other chiefs league together, and compel him by force of arms to retire.

"The people seem to belong to the same race as the Friendly islanders (Tongans), but the females are not in my opinion either so cleanly or handsome as those of Tongataboo. They are generally besmeared with a mixture of turmeric and cocoanut oil, which gives them a reddish appearance. Both men and women wear their hair long and hanging in ringlets down the back and shoulders. It is coloured according to each person's fancy, sometimes white, purple, or red."

About the same time, the island became a favourite resort for American whalers in the South Pacific, as many as nine being remembered at anchor at one time at Oinafa. From these were naturally many deserters, who came to live on the island. At first they were received with open arms by the natives and supplied with food, but in time their numbers became so great, and their behaviour was so bad, that they were left severely alone; from first to last it never went so far as to allow them to starve. Their number at one time cannot have been far short of 100, but fortunately they acquired no lands and few wives, so that

[1] "Missionary Voyage of the Ship 'Duff,'" Captain J. Wilson, 1799.

[2] "Voyage autour du Monde," par I. Duperrey, 1826, "Atlas Historique," Plate XLVIII.

[3] "Voyage in the South Seas," etc., Captain Peter Dillon, 1829, vol. ii, p. 95.

they have, comparatively speaking, left little traces. Their children invariably remained on the island with their mothers, and were brought up just in the same way as a Rotuman child would be. It is recorded, to show their mode of life, that one beachcomber started from his house to make a circuit of the island. Of course he had to stop and get drunk with each white man on his way, so that he was over three months in getting home again. In spite of their many enormities, they were never molested, the only ones murdered, apparently, being killed in their own quarrels among themselves. The captains of the ships undoubtedly encouraged their bad characters to remain on the island during their cruise, as they could always ship more trustworthy and as good men from among the natives. Then, when the cruise was over, they were as a rule quite willing to work their way home again, as all the liquor would be finished. The term *fu fis*, or white man, became from these men one of the worst abusive epithets one native could apply to another.

Tongan native teachers, or missionaries, reached the island about 1840. Six years later the Société de Marie established a mission, at first in Noatau, but it was soon transferred to Matusa. It was not a success, and so in 1853 was withdrawn, with about thirty of its people, to Fortuna. It returned in 1868, and now claims about a third of the inhabitants of the island, while the remainder are nominally Wesleyans. The first Roman Catholic fathers say of the natives that they treated the white people as an inferior race; that they have a great respect for the dead and burial grounds in every village; that each tomb is covered with sand, and each burial ground has a house for play; that all they do is to laugh, sing, jump, and dance; that the king reigns, but has no authority and has for throne a mat; that their chief work is to lie down and eat, and the king only to get fat; that all the island supply food to the king, and that the *mua* is to see that this is well paid.[1]

The Wilkes Expedition[2] only obtained their information from a few scattered natives; Tui Rotuma was the chief of these and was said to be the guardian of a young chief, Tokaniau, who would one day be king.

"The Rotumans resemble the Polynesians in form and complexion, but their features have more of a European cast. They have large noses, wide and prominent cheek-bones, full eyes, and considerable beard." "The expression of their

[1] "Mgr. Bataillon et les Missions de l'Oceanie Centrale," par L. E. Mangeret, de la Société de Marie.

[2] "Ethnography and Philology," by Horatio Hale; "Report of the Wilkes Expedition," 1846.

countenances, which is mild, intelligent, and prepossessing, corresponds with their character, which is superior in many respects to that of the Polynesians. Like the Caroline islanders, they are good-natured, confiding, and hospitable."

The account of their government is inaccurate; there were seven, not twenty-four, districts. The head chiefs about this time were Marafu and Riemkau, but neither were these titles, nor was there any rotation. Reckoning was said to be "by periods of six months or moons," which were called Oi-papa, Taftafi, Haua, Kesepi, Fosoghau, and Athapuaga; the method is then contradicted by the twelve English equivalent months being indicated, while there are of course thirteen moons in a year. The account of the language is however of great value.

J. C. Pritchard says,[1] "The people of Rotuma are very peculiar in their physical characters, which are but little known. They are tall finely made people, of almost black colour, and with straight flowing hair. Their skulls are massive and heavy, almost approaching the weight and density of the crania of African negroes, with the jaws considerably projecting."

W. W. Wood[2] mentions the graveyards of Rotuma, and gives a plate, but no standard of comparison for size, nor does he state where in the island the particular tomb, he represents, is situated.

J. S. Whitmee remarks,[3] "On Rotuma there is also a mixture of the two races (Polynesian and Melanesian), although the Melanesian largely predominates. In fact, it is probable that this island contains a mixture of the three peoples of Polynesia."

Captain Hope (H.M.S. "Busk," 1866) and Captain Moresby (H.M.S. "Basilisk," 1872) visited the island and forwarded reports to the Admiralty on it.

II. EARLY CANOE VOYAGERS.

In Rotuman legends mention is made of visitors from Tonga, Samoa, and Niuafoou, but only a few voyagers can be remembered, and their approximate date ascertained from the genealogical trees of their descendants. I allow twenty years for each generation, and add the age of the descendant who gave me the information.

The first comers remembered were the people of Niuafoou, an island to the north of the Tongan group, who came in several big canoes about 240 years ago; they are supposed to have numbered about 300 men, with no women or children. They landed

[1] "Natural History of Man," 1855, p. 474.
[2] "Tombs in the Island of Rotuma," "Journ. Anthrop. Inst.," vol. vi, p. 5.
[3] "The Ethnology of Polynesia," "Journ. Anthrop. Inst.," vol. viii, p. 261.

at Noatau, where they made friends with the people and learned their language. Physically, they are described as a tall and powerful race. First they assisted the Noatau people to conquer the rest of the island, and then themselves turned round and conquered Noatau. Their chief married the daughter of Urakmata, the chief of Noatau. Henceforward we find the possessor of their chief's name, Marafu, drinking *kava* second on the island and generally looked up to. Finally, after holding the whole island for a generation, they were conquered by Olili, of Maftau, and confined to Noatau.

Next came one "immense" double canoe from Tarawa, in the Gilbert islands, in an absolutely exhausted condition, with both women and children. Fonmon, a Noatau man, brought their canoe to the shore, and then took them before the *sou*, or king, who made a big feast and divided them out among all the districts, where they married and settled down. They stated that they had lost their way owing to a change of wind, and that they had tried to get home again, but were too exhausted to do so; then a fresh wind came up and blew them to Rotuma. One woman, Teauia, is remembered by name. She married Fonmon, and by him had a son, who married the daughter of Matiere. The last had a daughter, who married Maragtu, and their daughter married the great-grandfather of the present Marafu. This gives five generations, 100 years, and Marafu is at least 60 years old, so that their arrival must have been 160 years ago. According to Marafu, it was not the custom in the old days to marry so young, so that it would be probably nearer 200 years ago.

Next came one large canoe from Ruaniua, or according to another account from Tipokia, shortly before the advent of the white man, or about 1780. There was one large canoe, crowded with people, which came to Hatana and remained there, sometimes hiding behind Hoflewa, for several days. They landed twice in the night at Sihe, in Losa, and killed a number of people, whom they took away with them and devoured. They were finally seen from the top of Sol Sorou, a hill above Losa, and preparations made for them. Accordingly, when they landed the third time, the women were all singing in a house, round which the men were ambuscaded. The raiders thought of course they had an easy prey, but, when they had surrounded the house, they were set upon on both sides, and all killed or captured. Several families at the present day trace their descent from them. The name of the place, from whence they came, is given indifferently as Ruaniua or Tipokia. If pressed as to which place, they say Ruaniua, and will give you as the direction from which they came due west; the people are not

described as being in any way different from themselves. I have no doubt that Ruaniua is the same as Leuanewa (Lord Howe's Island, or Ontong Java), and that the canoe came by way of Tucopia, or Cheres Island.

The next visitor was from Tonga, apparently just before the advent of the white man. He is supposed to have come in a big double canoe from Fortuna, and to have left three of the women of that island in Rotuma, and to have taken three Rotuma women instead. He also is supposed to have told the people about the white men, and to have left the Marafu of that day, among other things, an iron axe.

William Mariner gives an account[1] of the voyages of Cow Mooala, who returned to Tonga, after an absence of fourteen years, in 1807. "In his way he touched at the island of Lotooma (about a day's sail from Fotoona), a place noted for the peaceable disposition of the inhabitants, and where he was received with an uncommon degree of respect. As they were little accustomed to the appearance of strangers, they were greatly surprised at the sight of so large a canoe, and considered the chief and his men as *hotooas* (gods), or superior beings, and would not suffer them to land till they had spread on the ground a large roll of *gnatoo*, which extended about fifty yards, reaching from the shore to the house prepared for them. At this island Cow Mooala remained but a short time. During his stay, however, the natives treated him with very great respect, and took him to see some bones, which were supposed to have belonged once to an immense giant, about whom they relate a marvellous account, which is current at Tonga as well as at Lotooma.

"At a period before men of common stature lived at Tonga, two enormous giants resided there, who happening on some occasion to offend their god, he punished them by causing a scarcity on all the Tonga islands, which obliged them to go and seek their food elsewhere. As they were vastly above the ordinary size of the sons of men now-a-days, they were able, with the greatest imaginable ease, to stride from one island to another, provided the distance was not more than about a couple of miles; at all events, their stature enabled them to wade through the sea without danger, the water in general not coming higher than their knees, and in the deepest places not higher than their hips. Thus situated, no alternative was left them but to splash through the water in search of a more plentiful soil. At length they came in sight of the island of Lotooma, and viewing it at a distance with hungry

[1] "The Natives of the Tonga Islands," by William Mariner, 1817, vol. i, pp. 322 *et seq*.

eyes, one of them bethought himself that if this small island was ever so fruitful, it could not supply more food than would be sufficient for himself at one meal; he resolved therefore wisely, out of pure consideration for his own stomach, to make an end of his companion. This he accordingly did, but by what means, whether by drowning him, strangling him, or giving him a blow on the head, tradition does not say. When he arrived at Lotooma he was no doubt very hungry, but at the same time he felt himself so sleepy, that he was resolved to lie down and take a nap, particularly as night was fast approaching, and to satisfy his hunger the next morning; and very lucky it was for the poor natives he did so (for it appears this island was inhabited at that time). He accordingly made a pillow of the island of Lotooma, and not choosing to lie in the water, he stretched his legs over to the island of Fotoona, making a sort of bridge from one place to the other. By-and-by he snored to such a degree that both islands, particularly Lotooma, were shaken as if by an earthquake, so as greatly to disturb the peaceable inhabitants. The people of the latter island being roused from their slumbers, were greatly alarmed—and well they might be—at this unseasonable and extraordinary noise. Having repaired to the place where his head lay, and discovering that it was a gigantic being fast asleep, they held a consultation as to what was best to be done, and came at length to the resolution of killing him, if possible, before he awoke, lest he might eat them all up. With this intention, every man armed himself with an axe, and at a signal given they all struck his head at the same moment. Up started the giant with a tremendous roar, and recovering his feet, he stood aloft on the island of Lotooma, but being stunned with the blows, he staggered and fell again, with his head and body in the sea; and being unable to recover himself, he was drowned, his feet remaining upon dry land, and thus the great enemy was destroyed."

"As a proof of these facts they show two enormous bones which, as they say, belonged to this giant, and the natives in general believe it. The people of Tonga, however, are not so credulous with respect to this story, which they generally tell in a jocose way. Mr. Mariner asked Cow Mooala what sort of bones they were. He replied that they were enormously large, he could not well describe their shape, that he was sure they were bones, though they were not at all like any human bones, and he supposed they must have belonged to some fish. To any new-comer from Lotooma the first question is, 'Have you seen the giant's bones?' But it would appear that communications with Lotooma were not very frequent, since the

inhabitants made so sad a mistake as to think Cow Mooala and his followers gods.

"Cow Mooala shortly took his departure from Lotooma, with three of the native women on board, in addition to his other followers, and sailed for the Fiji islands."

I have no doubt that the visitor from Fortuna was the Cow Mooala, whom Mariner speaks of. Marafu told me fragments of a legend similar to the above, but he stated that it could not be true, as he himself saw the bones when he was a boy, and that they belonged to a whale. He affirmed, though, that the break in the island was caused by the neck of a giant, who had used the island for a pillow; but he had completely forgotten the story, and did not connect it with the bones he spoke of.

A canoe next came from Funafuti, Ellice islands, with both men and women, nearly exhausted from starvation; this would seem to have been about 1815. They have left traces of themselves in several special songs, words, and modes of singing; I know of about thirty people, who trace descent from them.

Shortly afterwards came two canoes from Tonga and shipped 100 men, under Konou of Matusa, to go to Erromango, in the New Hebrides, for sandal-wood. Most of the men caught fever there and died, but both canoes returned in safety with full cargoes. This was the first sandal-wood which came to Rotuma. The date is given by Marasea, a man of about seventy, whose father went there when he was a boy; the date would be hence about 1820.

About 1830 a large double canoe was seen off Noatau, crowded with people in an absolutely exhausted condition, and brought on shore. Their point of departure was Nui, Ellice islands. They too intermarried and settled on the island.

In recent years many single canoes are remembered to have come from the Ellice islands, and two from Fortuna, but the latter people alone seem to have had any idea as to where they were going.

Since annexation to England a boat arrived from Niuataboutabou with three men, two women, and a child on board; it was a carvel-built boat and 22 feet long. They stole it from a German firm at this place, and, in fear of the Tonga Government, embarked with only a small mat sail and one broken oar, while their only provisions were green cocoanuts. After the tenth day they had nothing to eat. The woman's milk dried up, but the baby was kept alive by squeezing water into its mouth out of their clothes, wetted by the rain and the dew. On the seventeenth day Rotuma was reached, and they were brought on shore. Their joy was extreme, as they thought they had reached the Solomon islands, and expected to be eaten.

A canoe, when I was in Rotuma, drifted on shore at Noatau; it was 34 feet long and covered with barnacles. In build it was certainly not Fijian nor Rotuman, and probably came from Uea (Wallis Island) or Fortuna.

Inquiries on the island as to voyages, formerly undertaken by its people, were futile. Marafu's reply was to the effect that formerly they had big canoes of their own and used to voyage in every direction, but that that was before the Niuafoou people conquered the island. The names of stars are as a rule fanciful now, but Marafu pointed me out some named according to the different islands. On my inquiry as to where Tipokia was one evening, he took me outside and pointed to a star which he said was just over it. It may be noted that Cook charts Rotuma as well known to the Tongans in his "Voyages."

Captain Dillon states that the people were accustomed to undertake long voyages to Withuboo for shells, and mentions one canoe which was cast away on Hamoa, or Samoa. Withuboo is probably the same as Oaitupu, one of the more northerly islands of the Ellice group.

III. Physical and Moral Characteristics.

Physically the people are scarcely a fine race, though many of them would compare favourably with the Samoans. The average height of twenty men, whom I measured, was 5 feet 7 inches, and of a similar number of women 5 feet 4½ inches. It was, however, noticeable that the older men as a rule were bigger and taller than the younger. Muscularly many of the men are well developed, but few have the large and well-shaped limbs of the Samoan. Hands and feet are generally noticeably small. Faces vary commonly, but all possess characteristically overhanging eyebrows, and thickish lips are not an unusual feature. The mouth is large, and the cheek-bones are often somewhat prominent. The nose is usually rather flattened and broad, while the forehead is as a rule high. The hair is black, straight, and somewhat lank; there is very little of it, though, about the face and body. The colour of the skin is a light brown, varying in tint according to exposure to the sun; under the *sulu*, or loin-cloth, the colour is exceedingly light, and might be called a sunburnt white. The men for the last fifty years have left the island in great numbers as sailors, usually at a very early age. Indeed, it was, and is, considered a disgrace not to have been *furou*, or foreign. Possibly this has given them a round-shouldered appearance and a very bad walk, as both are absent in the oldest men. The men, too, vary far more than do the women, who when young have noticeably round,

soft, full, smiling, and pleasing countenances. They have a tendency to stoutness, but never the grossness of the Samoan, and their necks are well set on their shoulders. Their breasts are large, but only get slightly pendulous after childbirth. The pelvis is conspicuously broad, and the legs are muscular. After the age of thirty this appearance goes off, and at fifty they have sunken cheeks and eyes, shrunken breasts, and are often appallingly thin, while the men retain their good looks to the last, and, if anything, improve on their appearance as they grow older.

Here and there individuals could be picked out typical of Samoa and Tonga; but I have seen none, save direct descendants of Fijians, that had curly hair or any appearance approximating to that of the Melanesian. On the other hand, in features some come very near to the Chinese and Japanese, but they are always far more muscular and bigger in body. They more nearly approximate to the Gilbert islanders than any other people that I have seen, but the expression of their countenances is more open, bright, and less cunning.

In character they are gentle and kind to one another as well as to strangers. Their kindness and attention to all children is extraordinary. Nothing is too good for them or too much trouble to do. Castigation is unknown; their sole method of correction is by laughing and making fun of them. The old, as long as they don't get ill, are well taken care of, but if they were ill, were formerly much neglected and even allowed to die without any notice being taken of them. They are keenly sensitive to ridicule and sneering. The greatest punishment that can be inflicted is ridicule; I have seen natives slink into the bush to avoid such, when people were about to pass them. If they are telling a story or legend, the least sneer will stop them at once, or make them bring it to an abrupt close, and they cannot, as a rule, be induced to continue in the sneerer's presence. There is no mean with them; they like well and hate well. If a chief is liked, they will do whatever he wants without treating him with too much respect; if he is not, he will be treated with every mark of respect to his face, but as soon as he is gone will be laughed at, and nothing will be done. Fairness and justice in all dealings will be respected. Such a man they will not try to cheat; but if they are once cheated, they think themselves dishonoured until they have cheated their cheater still more in return.

They have the *faksoro*. If a man, say, wants a pig for a feast, he goes to another who has plenty and asks him for one. He cannot well refuse, but in his turn is entitled to ask for something at some future time. The custom, fortunately, is seldom abused. I was once asked for a sovereign in this way; I gave

it at once, and as the old man had been very good in telling me stories, did not intend to ask for a return. Shortly before I left he reminded me, and asked why did I buy a pig for a certain feast, which I gave, when I should have sent to him for one. I told him I wanted nothing, but shortly before I left received a fine Rotuman mat. Presents are seldom given now except some return is expected; real spontaneous generosity among themselves is quite unknown, but the beggar is never refused.

They are honest to a degree. If a man should pluck a cocoanut off another man's land, he will always tell him of it. The origin, I fear, of this is the superstition that if a person touches or eats the food of another, the other has the power to kill him, if he knows of it, by its means. As a rule they are good-tempered, but, when cross, get surly. Lying is a fine art among them; they try to say what they think you would like, and thus I have accepted no legend from less than three sources. The people got to learn this as I roundly accused them of it, and one man who had told me, in company with another white man, a long story, came presumably deliberately to me the following day and told me he had made it up. On inquiry, too, I found out that such was really the case.

Morality cannot be judged by our laws. Till they were married they could do what they liked. After sixty years of missionary enterprise it is much the same. Indeed, the old men informed me that the stern laws and fines of the missionaries did no good, but really accentuated the evil. Then, they say, adultery was unknown, but now it is common with both sexes. They must have been, indeed, a really moral race, as prostitution for money or gifts was, according to all white men, quite unknown. The grosser forms of immorality were unheard of, and are looked upon with the greatest abhorrence.

Faith they had not; their own religion was founded merely on fear of the *atua*, who had to be propitiated; their good spirit was entirely neglected. Now their religion is founded merely on the fear of hell; it is continually preached, to the exclusion almost entirely of the love of God. They subscribe liberally to it, but this is due to vanity, and that alone. Among the Roman Catholics—in justice be it said—there are no subscriptions, and instances of single-mindedness are by no means rare. They were really a brave people, in war the two sides coming to pitched battles, and not merely depending on their cunning. They swim from infancy, and there is an instance on record of two men diving through the surf in a strong undercurrent and for over an hour supporting a white man. When he was at last picked up, they had to be themselves hauled into the boat,

both much bruised and absolutely exhausted. Ambition, jealousy, and miserliness, with the crimes that they give rise to, are practically unknown. The people are clever and sharp at learning anything, but have little inventive faculty. They show considerable skill in imitating any object, but the invention of any neat contrivance, however small, is out of the question. Their habits are cleanly in the extreme. Both sexes daily wash themselves all over with fresh water and soap. The women wash themselves, in addition, morning and evening in the sea. Formerly, they used a red earth, which lathers slightly with water. It was a not inconsiderable source of profit to the islet of Uea, where it is quite abundant. Bathing in public without the *kukuluga*, or *sulu*, round the waist is absolutely unheard of, and would be much looked down upon.

The people are generally very sociable, and do not care to do anything alone; thus they combine readily for fishing, planting, or feasting. Ordinarily after a meal of some sort in the morning the men go to the planting grounds, where they remain till about 3 p.m., when they come home, each with a couple of baskets of food, which they then proceed to cook. The women fetch the water from the wells, look after the children, and perhaps go fishing on the reef, or join together in the making of mats. Much of their time is spent in gossip. After the evening meal the old men very generally meet in one another's houses and talk or tell stories till the early hours, while the young play various games on the sand, when the moon is in its second and third quarters, but in the other quarters meet and sing or dance their own *maka* in each other's houses.

IV. DRESS, ORNAMENTS, AND TATTOOING.

The ordinary dress of the present day for all consists of a fathom of cloth of perhaps double width round the waist; it is termed the *kukaluga*. No native cloth is now known, but it is well remembered and stated to have been generally of a brown colour; it was called *uha* or *api*, probably names for different kinds. The bark of the young breadfruit tree was used for its manufacture, and also that of a species of hibiscus; the paper mulberry of Fiji may have been used, but I never saw any growing in the island, nor could the natives identify any other trees as fit for the purpose. The bark was stripped off and allowed to soak in water for some days, after which the green outer bark was removed by rubbing it with stones sharpened to an edge; the bark was laid flat on a piece of timber and then thus scraped down. A stone was given

me on the ship when leaving Rotuma, which, on inquiry of Rotumans in Fiji as to its use, was identified by one old man for this purpose; it was picked up after a storm on the beach. It is a piece of coral about 6 inches long by 2½ broad and 1½ thick. The one of its sides is rough and broad, and the other has been smoothed down to an edge, which is not in the centre, but about ⅓ inch from one side of the thickness of the stone, and hence 1⅓ inches from the other; the part bevelled is about 1¼ inches broad. Thus one side is nearly flat, while the other is bevelled away. The cloth next was beaten out, and stained with the juice of the *ifi* tree (*Inocarpus edulis*, Forsk). For the same purpose also turmeric, or *mena*, was used, but usually mixed with a stain produced by rubbing up the root of a tree (*pakou ura*, the root of the *pakou*) with lime. The first of these is yellow, and would give density, while the latter is purple, so that combined they would give a sort of brown colour.

Of the fibres of the hibiscus two kinds of dresses were plaited, the *taktakoi* and the *arumea*; their wear was not restricted to any particular class. The former has a plaited part about 4 inches wide, from which the fibres hang down for about 16 inches on each side, but over the unplaited part are no fibres ending freely. The *arumea* is similar, but, from the loose fibres over the plaited part, looks like the skin of some animal; its breadth should be about 16 inches, and at the edge it should not have any fringe longer than the loose fibres are left. The *taktakoi* was the ordinary dress of the man, and the *arumea* of the woman, but the latter was used by the man as well. Properly they were about a fathom in length. One end was placed in both sexes between the fork of the legs and brought up in front and held there while the remainder was coiled round the waist and fixed, the *taktakoi* being doubled along the middle. The outside bark of the tree was taken off fresh by a shell, and then the inside fibres were stripped off by hand. Next they were well dried, and split up into fine strands, and the dresses made. When they were finished, they were placed alternately day and night in the sun and the salt water to bleach, an operation taking three months, but giving a splendid white. The plaiting of the *taktakoi* was generally much the finer, as there was less of it to do. Both were very strong, and would last a lifetime. In the plaiting of the *arumea* the ends were simply left loose, or the strand cut off with a loose end, and the cut-off part used again to continue the same plait; it is exactly similar to a common Samoan dress.

Other dresses were only for use on particular occasions or by particular chiefs. Fine mats of large size were generally worn;

indeed, for marriages, burials and feasts they were the proper dress (see Sec. XVIII). One kind, the *tofua*, was 8–10 inches wide, made of a fine pandanus mat, and sufficiently long to go conveniently round the waist; it tied at the top, with a few plaited loose pieces of fibre. Below this it had a fringe 8–10 inches long, made of the ends of the pandanus leaves used in its manufacture, cut up in a zigzag manner; round the edges should be a trimming of feathers, but wool of English manufacture has now generally replaced these.

The hair was formerly always worn long by both the men and women, and hung down as a rule below the waist: it was, however, when working, often drawn up in a knot or cone on the top of the head. Over the whole of the body the hair was carefully eradicated, shaving being effected by means of sharpened shells; the beard was likewise removed, but generally, when the man became any age, allowed to grow equally long with the hair of the head. Sharks' teeth were used for cutting hair. Of the invention of combs in Rotuma I could find no trace, the few I saw being typical Samoan.

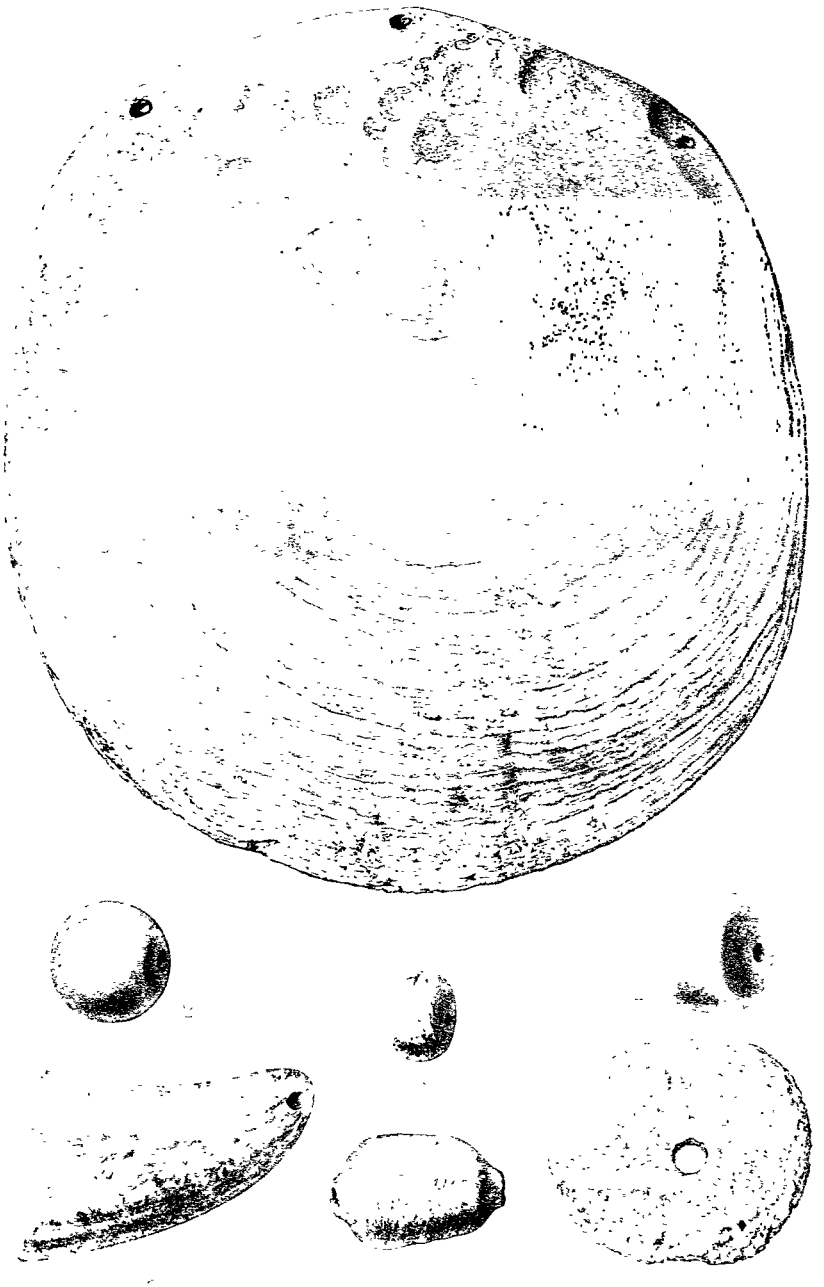
Of ornaments, chaplets, and necklets were the principal ones made of flowers and the bright yellow seeds of the *posoa*, *hata*, and *saaga* (*Pandanus sps.* ?) strung together. No ornaments were worn in the ears, as the piercing of the lobes was not carried out till after the coming of the white man. A flower might, however, be worn above the ear, while more permanent ones for this purpose were made from the feathers of the *tavek* (boatswain) and other birds. Necklets of beads made out of whale's teeth were exceedingly valuable and only allowed to be worn by chiefs; the beads were sometimes round, but more often oval, with the ends somewhat flattened (Plate XXV, Figs. 2, 3, 4). They were generally buried with their possessor as constituting one of his most valuable possessions. English beads were very greatly prized. These whale's-tooth beads were the money of the old days, and were termed *lei*, while the name of any necklace is *tifui*; hence these necklaces were termed *tifui lei*.

A breastplate of pearl shell (Plate XXV, Fig. 1) was very generally worn by the chiefs; it was termed *tiaf hapa*. In general it was simply the ordinary shape of the shell with the rough outside part, the horny layer, taken off and smoothed

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Explanation of Plate XXV.

Fig. 1.—Pearl shell breastplate, or *tiaf papa*, by $\frac{1}{2}$.
Figs. 2, 3, 4, 5.—Whale's-tooth beads, or *lei*, by $\frac{3}{4}$.
Fig. 6.—Whale's-tooth charm, by $\frac{3}{5}$
„ 7.—*Muleli*, by $\frac{1}{4}$.



down. Three holes were made near the hinge, and from these it was suspended on the upper part of the chest. The convex side was rubbed down till the outer coats were quite removed and the nacre was reached, and this side was hung outwards. One in my possession has not been nearly so much rubbed down, and seems to have been hung with the concave or inside outwards. They never seem to have been in any way cut down to represent a segment of a circle, as Duperrey represents them.

The only paint in use on the body was made from the turmeric plant, or *mena* (*Curcuma longa*, Linn.). The root of this is tuberous; when ripe, it is taken out of the ground, and left for one night. Then the skin is scraped off, and the tubers are washed in salt water. They are next ground up, or rather rolled, into a pulp with a thick round stick, called a *tama*, about 3 feet long and completely covered with cocoanut sinnet, after which the pulp is thrown into a bowl, or *umefe*, for one night. On the following day it is strained in a basket, with fern leaves round it, in water. The water is allowed to stand so that the grains may settle, and they are then similarly washed about three times. It is then re-strained, but this time into a canoe-shaped *umefe*, termed the *oipuuog*, and allowed to settle. The water is poured off, and the whole is churned up backwards and forwards in the *umefe* with fresh water, so that a scum forms. This is then carefully skimmed off and allowed to settle in an ordinary *umefe*. After it has settled, the water is poured off, and it is baked in a cocoanut shell, giving a fine orange-coloured powder. The part which has settled in the *oipuuog* is eaten, made into a *feki*, or pudding, called *tanua*.

The *mena*, when dried, was kept in a cocoanut shell, in the roof of the house. If a chief came into the house, some would be taken, and mixed with cocoanut oil in an *umefe puraagi mena*, and he would be smeared over the left breast with it. It was also used for smearing the bodies for dancing, and at a feast the mat dresses also were often completely covered. The heads of the *kava*-chewers, too, were generally thickly smeared, though lime to some extent subsequently took its place. I have one bowl used for the mixing with oil; it was stated to have been a chief's bowl. It is a bowl, cut out of a solid piece of wood about 10 inches long by 7 broad, somewhat oval, but pointed at the two ends. From one end a handle comes off underneath for 6 inches, and has a leg at its end, with, on the outside, a thin piece left projecting with a hole, through which a piece of sinnet was strung to hang it up by. The edges underneath are left $\frac{1}{6}$ inch high by $\frac{1}{4}$ inch broad, and wedge-shaped pieces every $\frac{1}{4}$ inch cut out. Two similar lines run

along and across the middle underneath, and on the latter line two more legs, 1½ inches long, are situated. The workmanship, as in all Rotuman carpentry, is very poor, but the roughnesses have to some extent been smoothed by the shark's-skin file.

The purple stain, before mentioned, is used to smear the cheeks for dancing to give them a colour, and also for picking out some of the tattoo marks with, but the ordinary stain for the latter is made from the soot of the seeds of the *hifo* tree (*Calophyllium inophyllum*, Linn.), mixed with the oil of the same seeds. To extract the oil, the seeds are allowed simply to rot in a bowl, and the oil is then strained off. To the same oil, or cocoanut oil, sweet-smelling flowers are added to scent it, and the hair is plentifully smeared with it; the whole body, too, after fishing or any exposure to the salt water is smeared with oil.

The men were always tattooed with a pair of drawers, reaching from the waist to just below the knee; the name for this is *fuol*, but this is also the name of a bivalve shell found on the reef at Matusa, from which the pattern was supposed to be taken. The women, all the old men agreed in saying, never had this, though Duperrey represents one with it; he represents

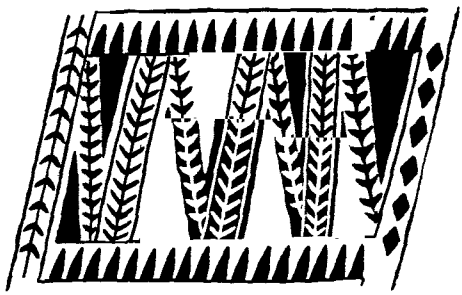


FIG. 1. TYPICAL TATTOO MARKING OF THE DRAWERS, OR *fuol*, BY ¼.

two lines of markings coming off free above the girdle line at the top, but these too I never found on the old men. The design at the knees is finished off likewise with one or more circular marks. Between, the surface is roughly divided up into parallelograms about 8 inches long by 3½ inches broad, with dividing lines about ¾ inch broad. The whole design is in straight lines. Where the body is awkward for the design, the whole is such a mass of tattooing that no pattern can properly be distinguished. Fig. 1 is a typical design of a parallelogram taken from the right hip; the long diameter runs along down the thigh. The instruments used were made from turtle bone, with one to five teeth.

The *sas* consists of a number of marks on the shoulders and arms of the men. On the left shoulder, immediately above the armpit in front, is a design typical of a bush or flower of some sort. One design, the *moiera*, represents a bush, which is fairly common; it contains four lines, representing shoots, coming off from one point at angles of $22\frac{1}{2}°$ with one another, thus making a right angle between the two shoots furthest apart; it has four leaves on each shoot always on the same side, represented by circles. Another design is the *perero* (Fig. 2), which is supposed to represent a strong-smelling flower which is commonly

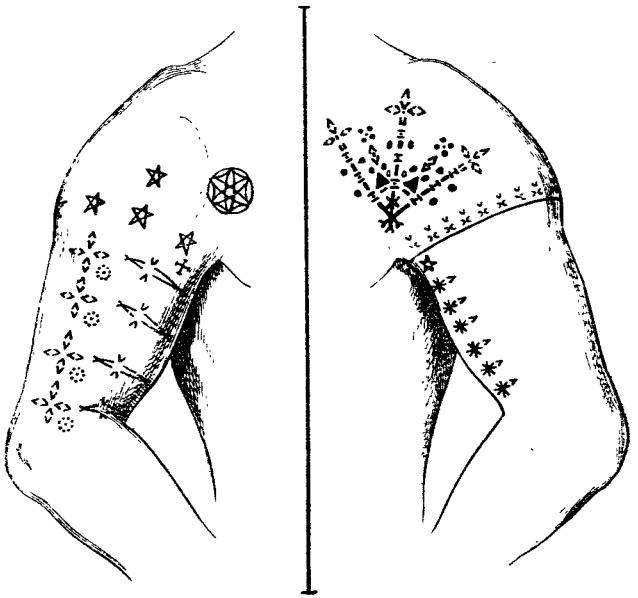


FIG. 2. TATTOO MARKINGS ON THE SHOULDERS, THE *sas*.
On the left shoulder is seen the *perero*.

given to one's *koilnga* (sweetheart). Other designs are stars, circles, etc., down as far as the elbow, more or less in series (Figs. 2, 3).

The woman's proper tattoo marks were three *suun* on each arm; these consist of three circles enclosing designs, which are always the same (Fig. 3). Besides these they have the *niglolo*, consisting of a diagonal mark along each joint of the fingers and a small blot on the hand below the base of the thumb between the palm and the wrist. Below the dress I do not think that there was ever any tattooing.

The old people claim to have had hats before the coming of the white men; they are of two kinds, the *fo peru*, of cocoanut leaves, and the *fo peru papoi*, of the bark of the *papoi* (*Cytosperma edulis*, Schott). A round block of wood is taken, and, if too small, made by means of leaves, tied on outside, to the requisite size; four pieces of bark or half cocoanut leaflets are crossed in the centre of the top, but sometimes there are four more placed over these. Then, while these are held firm, their ends are split up to the size it is desired to make the plait, and worked over and under one another. Similarly they are worked down the block and to make a broad brim, at the edge of which they are simply finished off by being turned back under the previous plait and cut off short. Very young cocoanut leaves are used and merely run over the fire twice through the flames; they are then dipped in salt water and dried in the sun, after which the midribs of the leaflets are cut out. The bark of the *papoi* is stripped off and then well scraped with the shells of

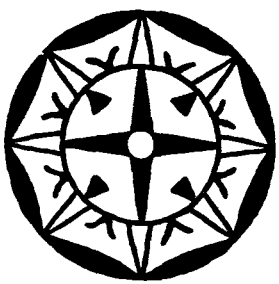


FIG. 3. TATTOO MARK OF THE WOMEN, OR *seem*, BY $\frac{1}{3}$.

the *ess*, a kind of limpet common on the reef, and put into the sun to dry. The same night it is placed in the salt water and again on the following day dried, after which it has a night in fresh water. Hats of this are softer, more durable, and stand rain better than those made from cocoanut leaves.

The *ison* is an eyeshade, made of two half cocoanut leaves plaited together, and tied by the midribs behind the head. It is made of the green leaves when required, and has many designs. For an umbrella the leaves of the fan palm, or *fokmoro*, are used.

V. MATS, BASKETS, THATCH, AND SINNET.

The usual mats covering the floor of the house are the *farou*, which stretch from wall to wall across the house, and are about $2\frac{1}{2}$ feet in breadth. The cocoanut leaves are cut, when they are standing upright on the tree, before it bears any nuts; hence

moderately young leaves from young trees are taken. These are passed through the flames of a fire a few times, and left in the sun to dry. The leaflets then are tough, but not brittle. Two full leaves are taken and split down their midribs; the four half-midribs are then fined down, so as only to leave a thin attachment for the leaflets, and placed back to back two and two, the leaflets of the one leaf pointed in one direction, and those of the other in the opposite direction. The leaflets of one are then plaited outwards over and under those of the other. The two sides of the leaflets are bent together along the midribs, so that each leaflet, plaited, has a double thickness. The ends of the several leaflets are fixed by the edges, being plaited along their length; the half-leaves of the two sides are fixed together by the first plait of the leaflets of the other side, being taken alternately over and under their midribs. Precisely in the same way is made a common mat known as the *kakoi*, but the several leaflets are not doubled, but plaited flat. The *tatou* resembles the *farou*, but the first plait joining the half-cocoanut leaves together is omitted, and the midribs are on the outsides of the mat. The two halves are joined by the ends of the leaflets being plaited down together in the centre. This kind of mat was made only for the chiefs and their wives to sit upon and never used by the people.

Thatch for the roof and sides of the house is made of the half-leaves, every alternate leaflet being bent over in the opposite direction to that to which it naturally points, and plaited flat. The ends of the leaflets are left free. This kind is, if made of cocoanut, called *puara*, and lasts about a year, but if made of the sago palm it is termed *oat*, and will last up to ten years. For the ridge of the house two whole leaves are taken and laid on top of one another, with the leaflets in opposite directions; these are then worked in and out of one another in the same way. The midrib of the whole leaf is thinned down considerably, so that the two sides are only just joined; this kind is called *fatafiti*, and is more commonly made of cocoanut leaves and renewed yearly. All kinds of thatch are made green and allowed to dry on the houses.

Of the baskets, the *ajarava* is made of the half of a green cocoanut leaf. A piece of *puara* is really made, and then the midrib bent round in a circle and the ends of the leaflets plaited along the bottom and up the open end, fixing the whole together. This kind is ordinarily made in the bush for carrying the food from the planting ground to the kitchen and then thrown in the oven. The *afmamaas* really is made, as it were, of one half of the *tatou*, in fact of two half cocoanut leaves plaited together, with the leaflets doubled and the midribs bent

round and fixed by the free ends of the cocoanut leaflets plaited along the bottom and up the open side, as in the last. This basket is used for taking out fishing on the reef, as it sits flat on the waist. A girdle is sometimes plaited of cocoanut leaflets to make a belt to hold it, but a piece of sinnet is more often used. The *tauga* is stated to be of Gilbert Island origin; it has round the edge the midribs of four half cocoanut leaves. The leaflets are doubled on themselves, and their outer, thinner part torn off, so as to make them still narrower. These are used mainly for bringing the cooked food from the kitchen to the dwelling-house, and to preserve the residue after the meal.

From the cocoanut also is made a broom, the *touferi*, of the midribs of the leaflets tied together, while torches are made of the sheath of the flower-bearing shoot of the cocoanut, the *sulu*. This, if split up, burns well, and will last for fifteen minutes or more in the wind.

The leaves of the *saaga*, a kind of pandanus, with rather narrow, light-coloured green leaves, very prickly edges, a central row of thorns along the middle of the under-surface, and branching freely with many roots, are used for making the finer kinds of mats. Of these the *epa* has about four strands to the inch, and is of a light colour. For it the old leaves are taken, and their thorns removed; they are then put into the sun to dry, and rolled up on the hands, when they are known as *takoiccp*. They are next released, falling like curls, and hung up thus for two weeks in the sun to dry, after which they are coiled up tight and fixed thus; they are now termed *aieoju*. When required, they are simply split up with the hands to the required breadths. Fig. 4 shows how a mat is begun at one corner; it is finished off simply by turning the ends back under the last plait and cutting them off short. Where required, fresh strands are introduced, their ends being left slightly projecting on the under-surface of the mat. These mats are of any size up to 4 yards long by 3 broad, and are ordinarily used for sitting upon, while the bed is made on the top of a pile of them. A coarse kind of the same, the *aap*, about 6 feet long by 3 broad, used to be made especially for sleeping on.

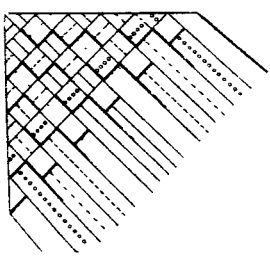


FIG. 4. DIAGRAM TO ILLUSTRATE THE COMMENCEMENT OF A MAT, SHOWING THE SEVERAL STRANDS MARKED BY LINES, DOTS, DASHES, &C.

The young leaves of the *saaga* are used to make a finer mat, the *sala*, with about fourteen strands to the inch. The raw

material is worked into the mat in precisely the same way as the last. The young leaves are taken and passed through the flames, after which the central row of prickles on the under-surface is removed, and the whole coiled up for one night; then the under-surface of the leaf is torn off and thrown away. The whole is next tied up in a bundle and thrown into salt water for one night; then the leaves are separated and dried in the sun, but are tied up and put in fresh water for the following night. The loose tissue, adhering under the upper surface, is scraped off by a piece of shell, if requisite. For the purpose a piece of clam (*Tridacna*) or other shell is taken, 3 inches by 2, and flattened above and below. The sides are squared, and one edge bevelled (see Sec. XIII). After washing, the leaves are again coiled up on the hand, and hung up on sticks in the sand for about a fortnight to dry and bleach. The outside rows of prickles are then taken off, and the curls are left for one more day, after which they are rolled up tight like wheels. One leaf gives ten to twelve strands after being split up, for which fish bones are very generally used. Commonly the edges used to be decorated with feathers, and fringes of various kinds are left. These mats are used for burying the dead in, marriages, dresses for feasts, sleeping mats, etc.; their colour is very white, to preserve which they are constantly placed in the sun. They vary in size, a big one being 12 feet by 9. Very small ones also used to be made for carrying babies in.

For sinnet, or *uun*, there is a particular kind of cocoanut grown with very long nuts. When these are still green, but nearly ripe, they are soaked in the salt water for about three days, when they become quite soft; the fibre is then pulled out of the husk and beaten with a stick to separate it. It is next combed out with the hands and put out in the sun to dry, tied up in bundles. The separate fibres are 12–16 inches long. A few fibres are taken and rolled up together into a strand on the thigh with the palm of the hand. Three strands are plaited together and worked so that their ends occur at about equal intervals along the *uun*; they are fixed simply by pushing their ends between the other two strands. The form produced is flat and used for all ordinary purposes, tying the beams of the houses, fish lines and nets. Other kinds with two to ten strands are known, but stated by the natives themselves to have all been introduced from the Gilbert islands and elsewhere.

A cord, the *alol*, is made of the inner bark of the breadfruit tree, soaked in water and beaten out. The strands are always joined on to one another in one continuous whole, being simply twisted and rubbed together on the thigh. Usually three strands are taken and thus merely rolled up. *Alol* is very

white and strong, and, as it does not in any way spoil in salt water, the best fishing lines and nets are made of it.

Fans are made of the leaflets of the cocoanut doubled, with their handles formed by the midribs of the same leaflets. A special kind from the fan palm was made for chiefs and not allowed to be used by others.

VI. PLANTING, FOOD, AND COOKERY.

The chief vegetables cultivated for food are the *papule*, or taro (*Colocasia antiquorum*, Schott), *papoi* (*Cyrtosperma edulis*, Schott), *ouhi*, or yam (*Dioscorea ulata*, Linn.), and *pere*, or banana. Taro and bananas are usually planted on the steep hill-sides after the earth has been thoroughly dug up with flattened sticks or English spades; the tops of the taro and the shoots of the banana serve for planting. The Rotuman variety of taro does exceedingly well in such positions, growing very large, and is never planted in swamps. A kind, the *apia*, is common on waste lands and near the houses, but is not good for food. Of bananas seven kinds are known, but there are only practically two, the one for cooking and the other for eating raw. To ripen they are buried in the sand. The *papoi* is grown in swamps of brackish water and seldom dug except after a hurricane, when food is scarce. For yams the bush is roughly cleared. Rocky land is chosen, and its little existing earth is scraped together with the hands into heaps, in the top of which the yam is planted. After these were dug the land used formerly to be burnt off, the fallen timber by that time being thoroughly dry, and *kava* (*Macropiper methysticum*, Miq.) planted; now it is more frequently tobacco, pineapples, or sugar-cane. Planted, but in no way cultivated, are the breadfruit (*Artocarpus incisa*, Linn.) and the *niu*, or cocoanut, for food, *uta*, or sago (*Sagus vitiensis*, Wendl.), for thatch, and the *saaga* (*Pandanus sp.?*), for making mats. The food plants growing wild include the *ifi*, or Tahitian chestnut (*Inocarpus edulis*), *fava*, or *dawa* of Fiji (*Pometia pinnata*, Forst.), *mena*, or turmeric (*Curcuma longa*, Linn.), *mara*, or arrowroot (*Tacca pinnatifida* ?), *asa*, or papaw, and the *hosoa* (*Pandanus odoratissimus* ?). There is further the *hifo*, or *dilo*, of Fiji (*Calophyllium inophyllium*, Linn.), the oil from the seeds of which is regularly extracted. Of the above the taro, yam, and banana are the staple articles of food, and in such an equitable climate as that of Rotuma can be obtained at any season of the year. Arrowroot can be dug whenever it is desired. The breadfruit is season during October, November, and December, and cocoanuts can be obtained at any season in any condition of ripeness.

For animal food there are the reefs, which can always be fished at any time, and furnish a practically inexhaustible supply. Pigs are kept by all and fed regularly every day with ripe cocoanuts, the waste of the house, and the fruit of the papaw. Fowls are kept in the plantations, and have small low houses, fashioned of sticks and thatched; near each is a conch shell, by which they are called to receive their food daily; their eggs are seldom molested. To catch the wild chicken various traps are used, but all in principle consist of a bent stick, which, springing up, hangs the fowl by means of a piece of sinnet either by its neck or its legs. Wild pigs are sometimes caught by making a trench and covering the same over carefully with rotten sticks and earth. Dogs, *kanua*, are of a peculiarly coarse breed; their introduction is probably comparatively modern. The people say that they were never eaten because they always had plenty of pigs. In killing any animal for food great care was taken not to let it bleed in any way, a short club being used for pigs.

The men of the household, when they come down from the plantations, usually carry a couple of baskets of food or bunches of bananas over one shoulder on a stick. Between them they will have everything requisite, even down to the ripe cocoanuts to feed the pigs. Green cocoanuts for drinking purposes will have been all husked on a pointed stake, the *esoa*, and tied up in pairs, a small piece of the husk being left over the soft eye, so that they shall not go bad. At once the men set to work to make the fire and cook the food, an operation never performed for them by the women, who, however, serve the food to the men, when it is cooked, and then retire to their own meal. Fire was formerly produced by simply rubbing a piece of hard wood up and down in a groove in soft wood; the operation was termed *sia*. It would then be nursed and fanned into flame on a dry cocoanut husk. It was the business of the women always to keep a fire in, and in Noatau at least, I was informed by Marafu, fire could always be obtained from the *atua*, or spirit, house.

In each house the chief man has usually a table, the *umefe ataga*, a very slightly concave board, about 2 feet long by 1 foot broad, with four legs 3–4 inches high; it is carved out of a solid piece of wood. In addition to the above, a ridge, often notched and perhaps an inch high, is left down the middle of the under-surface, and on the same side, between two of the legs along the length of the table, a round piece about 3 inches long is left, with a hole in the centre, through which a piece of sinnet is strung, for hanging it up when not in use. On this a banana leaf is placed; the rest of the

men simply have their leaves on the ground. All sit with their legs crossed in front of them, with their knees touching the ground. The food is brought in in baskets by the women; the chief has a basket to himself, from which no one else is helped, while the rest eat several from the same basket and off the same leaf. The women place the food from the baskets in front of the men, and for the chief further peel the vegetables with their fingers and nails. It was formerly only a woman with the *niglolo* that would be entitled to do this. At the end of the meal they hand each man a green cocoanut, the only beverage drunk after the meal has begun, having with a piece of stick opened it by making a hole in the soft eye and having provided a cork, usually a piece of the husk, to prevent it from spilling. This done, the food left is gathered into baskets, and the women retire to another house for their own meal. Essential to the house is the *kokona*, which consists, as it were, of the four sides of a box, about 4 inches deep and 2–3 feet square, with the bottom removed and replaced by netting; this is then suspended from the beams of the house, but the four pieces of sinnet from its four corners have generally first to pass through the middle of a flat board, the use of which is to prevent the small native rats from running down the sinnet and getting at the food. Its origin (see Sec. XXV, *e*) is legendary, and it is said to have come with the *moa*, or fowl.

Cooking is usually carried on in an especial house, the *kohea*, open at the ends and sides, low, and roughly put together. The only method is that of steaming in the native oven. A hole is made in the ground in the centre of the house and lined with stones; on the top of these a great fire of sticks is made. Everything being ready and the stones sufficiently hot, the fire is raked out, and a few green leaves are thrown on the stones. Then the food is placed on top and covered over with green leaves and finally with about 3 inches of earth. Most vegetables are put in exactly as they are, but pigs, fowls, and big fish are ripped open, cleaned, stuffed with cocoanut leaves, and placed in tightly fitting baskets of the same leaves to prevent them from burning. The liver is carefully wrapped up separately, as it is esteemed the greatest delicacy.

The green cocoanuts, after the milk has been drunk, are filled with salt water, and their holes stopped up with conical corks, made of the leaves of the *saaga* twisted up; they are then placed in the sun on small platforms for some days. A certain amount of fermentation takes place, and the soft kernel rots a little, so that a buttery mass, the *dahrolo*, is obtained; it is much used as a seasoning for puddings of different sorts and for cooking fish. No salt is ever collected, but this doubtless

acts as a substitute; almost daily some vegetables are cooked with it. Scraped cocoanut is another seasoning, the scraping being done on the *foa*. To make one of these a bough of a tree is selected with a branch going off at an angle of about 60°; the bough is then scraped flat, 18 inches being left below the branch and 3 above. To the branch, cut off about 9 inches long, is firmly lashed underneath a suitable piece of shell (now iron), with the concavity upwards. The cocoanut is broken in half in its shell, and the kernel of each separate half scraped on this, the worker sitting crosswise on the flattened branch. One I saw still in use has a flat piece of pearl shell, with the edges notched. I have seen also a notched pearl-shell cocoanut scraper for use in the hand. Hollowed-out wooden bowls, *umefe*, are used for making the puddings in; they have no ornamentation, and have every conceivable simple form. All puddings are termed *feki*, but the term, if not qualified, would be taken as applying to one made of breadfruit, and the juice expressed out of scraped cocoanut; another favourite form is made of beaten arrowroot and cocoanut. Small fish are usually cooked with the *dahrolo*, when the dish is called *te lulu*; fowl, young taro leaves, and *dahrolo* are termed *iko*. All these are simply wrapped in the leaves of the banana or *papoi*, and after being tied up placed in the oven with the other food. Sometimes in them the juice of the sugar-cane is substituted for that of the cocoanut.

The *ranji* (*Dracaena terminalis*, in Fiji *gai* or *masawa*) grows plentifully in places and to a considerable size. It was, for some reason now apparently forgotten, strictly *ha*, or taboo, for any man to dig and cook it by himself. It was only dug by a whole district at a time, and then all took part. Each dug as much as he could in the day, and at night an enormous oven was made, in which a big fire was kept up all night, with singing and dancing. The roots of the *ranji* were then placed in at dawn and left for two days. Its taste is somewhat like liquorice, and its consistency is about the same, but it is very rarely cooked now, and little of the ceremony is kept up. The reason, according to Marafu, for the above was that the *ranji* was the food of the *atua*, and could only be eaten, when their priests gave leave.

When *rava*, tobacco, reached the island I could not discover, as even the oldest men remember it well; it is dried partially and then pressed into cakes in the *voi rav*, a kind of Spanish press. For smoking the native method is to wrap it up in banana leaves, which have dried after being drawn a few times through the flames to make them tough.

VII. THE "KAVA" CEREMONIAL.

Kava is never drunk during a meal or after, but always just before; it is proper after it, before commencing a feast, to eat a piece of pineapple or some other fruit. It used to be attended with considerable ceremonial.

With all the chiefs sitting round in a circle with the food laid out ready in front of them, the root of *kava*, unwashed and with all its leaves and shoots, is brought in and taken up to the biggest chief, who is properly sitting as near as possible in the middle of the long side of the house, which is nearest to the shore. Near the head chief is sitting a man termed the *mafuoi*, whose business it is really to direct the whole ceremonial and to call out each chief in his proper order for the *kava* to be handed to him. He now calls out, "*Kava!*" and after a few moments "*Monu!*" on which the *peskava* (or *kava*-cutter), usually the son of the giver of the feast, drives a sharp stick of hard wood into the root to break it up for the chewing. The root is then taken away, cut up, and thoroughly washed, while the *mafuoi* or some old man tells a story of the old times or whale-fishing. The chewing is now done by the old women, and the *kava* placed in the *tanoa*, or bowl, in small and fairly dry lumps. After sufficient is chewed, the *mafuoi* calls out, "*Solsito honi!*" an order to the head woman to wash her hands. After this is done, she calls out to another woman who has water in a cocoanut shell, "*Kosu*," or "Pour on the water." The whole she then proceeds to knead up with her hands for some time; another woman then hands her the *nihou*, or strainer, with which she removes the woody fibres. The *nihou* is then handed to another woman, who washes it, while the kneader has water poured over her hands. The *nihou* is handed back to her, and she calls out, "*Kava ito te*," or "The *kava* is ready;" the *mafuoi* answers, "*Kava tonia*," on which the woman rinses the *nihou* several times into the *ipu*, or cocoa-nut-shell bowl, until it is full. The *mafuoi* then calls out to each chief in turn, "*Tou kava Marafu*"—"Give the *kava* to Marafu"—strictly in accordance with their rank on the island, derived from their names, and not position. The man who has had the direction of preparing the feast then, bending, carries the *kava* to the chiefs in turn.

At a really big feast in the old days each chief would have a separate root of *kava*, and each would have his own *peskava*. The *kava* is always made very strong, and only one bowl is as a rule drunk; the women are fond of chewing it, and on the Government forbidding it to women with child they were

petitioned so strongly against it by the women themselves, on the ground that their teeth were going bad, that they had to remove the restriction.

The *tanoa* is a round bowl, with four legs; it is properly about 10 inches in diameter, and the hollowed-out basin between the legs should almost touch the ground. The *nihou* is made of the beaten-out bark of the *fou* (*Hibiscus sp.?*) dried, and tied up together. The *ipu* is simply a half-cocoanut shell; small nuts are chosen for the purpose, since the *kava* is made very strong.

VIII. HOOKS, NETS, AND FISHING.

The fish-hooks of Rotuma were generally very crude. Indeed, the extent of the reef is so great that, except by isolated villages, little deep-sea fishing was carried on. The *fe*, or shark-hook, was made from a shrub, the *tiere*, which, when it reached the height of about 3 feet, was twisted into an open knot, with a diameter of about 5 inches; it was then allowed to grow for about two years before being cut. The hook was then shaped, and a piece of hard wood spliced on as a barb projecting inwards. The bait was tied on over the barb: the fish working at this, as the wood was springy, gradually got its jaw between the barb and the stem of the hook. On being struck the barb caught in the gills, and the fish was hauled up sideways. A similar hook, but smaller, the *oiniafu*, was used for catching a large species of rock cod, the *roog*. Small round hooks were cut out of pearl shell or turtle bone, 1–2 inches in diameter, and termed *ovi*; a barb was always cut on the outside. Those of pearl shell for certain fish were not baited, nor towed behind the canoe. Proper spinning baits are termed *pa*, and were of two kinds, the one large, of pearl shell fixed on bone 4 inches, or more, long, and the other small, 1–2 inches, of pearl shell alone. Both had underneath a hook of turtle shell or bone, and at the end a few short white feathers of the *tavek*, or boatswain bird, sticking out. *Tjija*, long fish with very narrow jaws, almost too small for any hook, are caught by a lump of spider's web at the end of a line on a long bamboo, when the tide is coming in. The teeth are numerous and long, and cannot disentangle themselves.

The mesh of nets is exactly the same as the English mesh. Hand-nets, like landing nets, called *ti*, are of rather oval shape, with a strongly spliced frame. They are used for catching lobsters on the reef at night or flying fish, attracted by a torch on a canoe. The latter fish used to be regularly attracted by large fires on certain islets of the reef.

To catch small fish, the women collect the loose pieces of coral and stones of the shallow water of the boat channel of the reef, and form heaps of them about 9 feet long by 3 broad and 2 high. At low tide they are covered by from a few inches to 2 feet of water. These they visit daily and feed with cocoanut, scraped up and mixed with a little of the ink of the cuttlefish, which is commonly caught in holes on the reef. At some part of the stone heap a fish basket, the *afuli*, may be placed: this trap is usually circular in form, about 1½ feet in diameter, and 8 inches high. It is made of any shoots and twigs of suitable size and the midribs of cocoanut leaves; the mouth is in the middle of one of the flat sides, and the fish of course cannot escape, owing to the ends of the frame projecting inwards; the whole is bound together by pieces of the bark of the *fou* (*Hibiscus sp.?*). Ordinarily for fishing in the stone heap a large basket, the *afmamass*, is partially filled with loose pieces of coral and placed flat with its mouth in the stone heap at one end. The stones are then moved back one by one from the other end, the fish being driven back more and more from stone to stone, until finally all take refuge in the basket, which is then emptied of its stones, and the fish, prawns, and crabs left; the fish are then slipped into another *afmamass*, tied to the waist, and a fresh heap will be worked over. Sometimes instead of the basket a net, *rou hulaghni*, with floats above and weights below, may be placed round the stone heap, but this is more commonly used for placing round any large overhanging coral head, from under which the fish are driven by a stick. The usual method of killing them, when they have entangled themselves in the net, is to place the mouth under the water and bite them just behind the head. A throwing net, *rou kiri*, 6–8 fathoms long and a fathom deep, weighted at the bottom with shells and with floats of wood above, if cast well, falls in a complete circle and surrounds the fish. It is used principally at high tide, when the fish come on the reef in great shoals and close up to the shore.

For turtle a net, the *rou hoi*, of very strong sinnet, with a mesh of about 6 inches, is used. It is put down in a passage on the reef just before the tide commences to ebb, and any turtle that may be on the reef driven into it by canoes. Two canoes remain one at each end of it; and when any turtle is seen to go in, a man from each dives after it and seizing it by means of its front flappers, turns it over so that it is compelled to come to the surface: they then call "*Koko urofi*," a phrase confined to this fishing.

A large net, *rou hapa*, is made for fish-driving, with about an inch mesh; it is always made of *alol*. To make one a

whole district will combine, and each household will have its allotted share. The net has a great pocket in the middle, about 12 feet in circumference, open at its ends; it is about 25 yards long, and tapers somewhat. From it two wings come out, 80–100 yards long by about 6 feet deep. A suitable spot is chosen inside the reef either at one of its larger passages, or between two islets, and here two rows of stones are placed at about a right angle with each other; their length varies, but if possible they end in water not more than a couple of feet deep at low tide. At the angle they do not join, but run parallel to one another, about 4 feet apart, so that the pocket of the net can be fixed between them, while the sides of the net run along the two lines of stones. The net is held down by the stones below, and supported upright by stakes driven in between them.

At Noatau the point, selected to drive to, is in a big passage in the reef, and to here the lines of stones run from the reef and at right angles to this from the shore. The net is put down at quarter-ebb and firmly fixed under the direction of an elected chief of the fishermen: at half-ebb the Noatau people come up and range themselves along the lines of stones, and continue these to the shore and reef with canoes or in the water. When this is done a signal is given, and the Oinafa people form a line right across from the shore to the reef close to their village and commence to drive down. As they come up the ends of the net will be carried round and closed in. It will now be about an hour before low tide. Lot after lot of fish will be driven into the pocket, and removed into the canoes. Any fish speared or caught outside the net is the property of the one who catches it, while the rest are equitably distributed through both the districts after a division between the two has been made on the islet of Husela, off Noatau: for, if brought on shore, the fish would all be the property of the Noatau people. In one drive we obtained, with about 200 people, 648 large fish of different kinds in the net, and estimated weight at rather over 1½ tons. They were laid out on the ground in tens and then again in groups of ten of these, each ten of about the same size.

The first time the *vou hapa* is used it is termed the *hou i ag vou*, or "the wetting of the net," and the second time the *fu i ag vou*, or "the hauling of the net." The fish caught in these hauls are all cooked together, and a feast is held: subsequently the net will be lent to any part of the district which desires to use it, or to any other district for the half of the fish it catches. Any *noh*, *sagir*, turtle, or sharks caught belong to the chief; any one eating them without his leave would get sick and probably die, did they not *faksoro* him.

A particular net, the *vou siu*, is used for catching the *siu*, a long, very strong fish, which will jump any net. The net is about 12 feet long by 6 broad, and fixed between and at the ends of two bamboos, 18 or 20 feet long. A number of canoes paddle along on the reef, when the tide is high, in two lines, with a man, the *toko*, on the watch at the head of each. When the *siu* are sighted, which is usually near the shore, every one jumps into the water. While some surround them with a net, the others get these ready to catch them, when they proceed to jump the net. If the party fishing is large with several canoes, this fishing is termed *vou roa*.

IX. DISTRICTS AND THEIR GOVERNMENT.

The island was formerly sharply divided up into five districts, Noatau to the east, Faguta to the south, Itoteu to the west, and to the north Malaha and Oinafa. The first division made was, according to legendary accounts, between Itoteu and the rest of the island to put an end to the disputes of two kings, who claimed dominion over the whole. A chief for the purpose came from Hatana, but on the night previous to the day, fixed for the division, his daughters made along this line a good road, which he found easy to traverse, and thus made the division. Later Itomotu (the part cut off) was separated from Itoteu, leaving a part to the west still belonging to Itoteu, but completely separated from it by the new district. Here in Itoteu the large village of Losa is situated; it owns the two islands to the west, Hatana and Hoflewa, which are regularly hunted for the eggs of two species of *Anous*, while Uea belongs to Itomotu. Faguta was divided into two districts, Pepji and Juju, by the other districts after a successful war, to weaken the power of its chief.

Each district has a chief of its own, the *gagaja*, but the chiefs of Noatau and Faguta were the most important and practically ruled over the north and south sides of the island. The government of the whole island was in the hands of a council, formed of the chiefs of the several districts, when they were not at war with one another. The president of this council was the chief of whichever of these two districts, Noatau and Faguta, had conquered the other in the last war; he was called the *fakpure*. The office of *gagaja* in each district always remained in the same family; when one died the heads of the families, or *hoag*, in the district met together and proceeded to elect the most worthy of the same *hoag* to the office. The *hoag* then met, and invariably conferred on him the family name; he would be generally the brother, son of an elder brother, or son of the last

chief. It was not usual to confer it on children, but cases are remembered, when there was no suitable near male relation; an old man of the district was then usually elected too, from some other important *hoag*, to act as deputy, the real chief not acting as a rule till his deputy died. If it was desired to depose a chief, it was a difficult matter, if his *hoag* did not meet first and take away from him the family name. There was a virtue in this name, and, if the family would not give the name to the newly elected chief, it was doubtful if the district in the old days would venture to appoint him. Marafu was the name of the chief of Noatau. The present one informed me that there was a contest about his grandfather (possibly granduncle), and that the district gave way to the family. The name in Faguta was Riemkou. After the division of this district into Pepji and Juju, the chief of one was Riemkou and of the other some near relation of his. In some districts, chiefs from other families have been made by their conquerors in war, and any family which has once had the chieftainship claims the right, so that it is hard to find out to which family it properly belonged. The *gagaja* was generally installed on the first day of the new moon. Presents of food had to be brought him by the whole district, and the *kava*, after bowls had been poured out to the *atua* and dead chiefs, was first handed to him, to be by him poured out to the last chief, whose spirit then entered him.

The districts were subdivided into *hoag*, a name applied to all the houses of a family, which were placed together, forming, if the family was a large one, a small village; it is also applied to the family itself. Each of these *hoag* had a name, which was conferred on one member of the *hoag*, who was invariably *ipso facto* its head, or *pure*. If too young or inexperienced for the post, as with the *gagaja*, a deputy was appointed. In most cases, however, the name was given to a brother of the last *pure* or its oldest member of pure descent, the husband of one of its women not being appointed its *pure* or given its name. From the name to some extent the *hoag* took its position or rank. *Kava* was called to the men in a very definite order, according to the rank of their names. Usually the chief of the district had the name, which was the first in his own district to be called, but, in any feast of his own district or of the whole island, Tokaniua of Oinafa was always called first, though his family, as far as I could ascertain, never held the office of *gagaja* in any district. Marafu told me too that *kava* would be called to Tokaniua before any dead chiefs, with the sole exception of Rahou (Sec. XXV, *a*): the next name to be called was Marafu. Tokaniua (Sec. XXV, *b*), perhaps represents the original inhabitants of

the island, and Marafu the most important recorded addition to its population and whilom conquerors.

The name of one *hoag* in Noatau, situated at the most south-easterly point of the island, is Rotuma; it would be, on a straight course from Tonga with a south-east trade, the point first visited, and probably from this *hoag* the Tongans gave the name to the island. The *hoag* name is Tui Rotuma; *tui* in Rotuman means great in respect to size, but in Tongan king or chief. This will account for the mistake in the report of the Wilkes Expedition.[1] "The king of Rotuma was residing at the heathen village in Tongataboo, an individual of large stature, having the nose slightly arched. His attendants, however, from the same island were not distinguishable from the Tonga men around. He had been brought here by a whale-ship together with his numerous wives, and when questioned on the subject of his rank he manifested some diffidence." The latter was but natural, as the bearer of this name is only a very small chief: his numerous wives were probably women of his *hoag*, who had accompanied him, or *pro tempore* connections in Tonga.

The power of the *gagaja* in his district was not arbitrary; he was assisted by a council of the possessors of the *hoag* names, which might reverse any action of his. Conflicts between the chief and his council were rare so long as his decisions were in accordance with, and he did not infringe, the Rotuman customs. He was called upon to decide disputes about land between *hoag*, or within a *hoag*, if its *pure* could not settle it; disputes between individuals of different *hoag* were referred to him. He could call out the district for fish-driving, war, or any work in which all were interested, and had the power of fining any individuals who did not come. If the walls or paths of his district were in disrepair, he ordered out all the *hoag*, interested, to do the work; he had further to keep a watch to see that a proper number of cocoanut trees were planted, and that all the *papoi* land was cultivated. Any one receiving the *hoag* name had to be recognised by him on their election before they could take it. As a set-off to these, he received to some extent first-fruits and a present of food from each of the parties to any suit, which might have been held before him in his district. Offences against the district were punished by fines of food, or by work for the good of the district in general; against individuals the work was done for, or the food given to, the injured party. In cases of adultery the injured individual had the right of club law, and the friends of the injurer could not retaliate by the same, or they would come under the punishment

[1] "The Races of Men," Chas. Pickering, 1849, p. 99.

of the whole district, and death, by being set afloat in an open canoe without paddles, was the penalty. There is an account, though, of one offender being kept for a long time at the bottom of a cave, 80 feet deep, from which exit was quite impossible. Extremities like this were very rarely resorted to, a big *faksoro*, or present, to the injured party usually settling the affair. A root of *kava* was offered first, and if this was accepted, it was a sign that they were willing to settle the affair, and an amicable agreement as to the amount of the indemnity was usually arrived at. Disputes between districts were generally settled in the same way.

X. GRAVEYARDS.

In former days, it seemed to be the desire of the chiefs to be buried on the tops of the highest hills in their several districts, or on some conspicuous prominence into the sea. In the bush, graveyards are scattered everywhere, but most have no stones or monuments, and can only be found by the presence of foraminiferal beach sand, mixed with the earth. One such burial place near Halafa at the west end was on the steeply sloping side of a hill and completely overgrown with trees; there were here and there flat basaltic stones lying, a foot or more square. Round these perhaps could be traced an area of about 2 feet by 4 to some extent marked off by blocks of the more recent lava. The bodies were only covered with a few inches of soil, and the bones were completely rotten; the head was to be found directly under the basaltic block, and the position of the body seemed to have been originally a sitting one. Another such burial ground on the land slope of Sol Tia, in Noatau, showed no beach sand, the bodies being simply buried without order in the red volcanic earth; it was supposed to have been formed of the slain in a big battle between Noatau and Faguta.

On the tops of many hills and islets off the coast are platforms, built up at the sides, with graves marked out on the top. On the top of Sol Hof, the highest hill in Oinafa, is one such; the summit is a narrow ridge, on which at one end a platform has been built up about 30 feet long by 20 broad. Its walls vary in height up to 8 feet, and are built simply of the loose rough blocks of lava that are found in the vicinity. On the top, areas are marked out by flat stones, about 2 feet square by 3–4 inches thick. Six placed vertically enclose the grave, two at each side and one at each end, and project for about 8 inches above the general level. In the middle across and resting on them is another similar block, the same size. These are formed of a sand rock, which is only found on the beach

between tide marks, and which, while it is at first extremely friable, on exposure to the air gets very dense and hard. On opening these graves, the bodies were reached at a depth of about 3 feet; they were all recumbent, and there seemed to be layers of bodies, one on the top of the other. I could not make out any order in the arrangement. All I found within these areas seemed to be adult males, and heads and feet were often in close proximity. I pulled down the wall of the platform at one place, and found that the whole was filled in with beach sand; there were bones, however, right down to the volcanic soil. Outside these graves bodies seemed to have been buried without order, and there were the remains of men, women, and children, mixed up anyhow. Similar results attended excavations on a hill above Noatau and on the islets of Afaga and Solkopi, but the graves were not marked off so regularly on any of these burial grounds, and their stones were often larger. I would suggest that these were formed gradually, and, as more and more people were buried there, slowly built up to their present height. Perhaps the enclosed areas were for the owners of *hoag* names, and the rest were buried indiscriminately.

Most burials, during this century, of district chiefs have been in their own villages, in most of which close to the shore are very large artificial burial grounds, or *tamura*. In each district is one such enormous more or less rectangular burial ground, a mound of sand walled in by large rectangular blocks of beach sand rock or unshaped pieces of lava; their construction was apparently gradual, and similar to those on the tops of the hills. Their height varies up to as much as 16 feet, while they may be 30 yards or more square; some are terraced. Many are placed on prominent capes into the sea, and most are visible from it; those at Oinafa and Matusa are especially conspicuous. Their number is enormous, and there are very great variations in size and position, but a height of about 6 feet to start with, unless on some prominent raised point, seemed to me general. From these, the whole island of Rotuma was formerly known to sailors as the island of graves.

The chief priests, the *sou* and *mua* (Sec. XIV), were buried on the tops of the hills, and many *hoag* claim burial there. For this reason I think that most of these village *tamura* are of modern date, and that there has been a change of custom in this respect. Maftau, in Itomotu, has its graveyard on a conspicuous and bluff cape, about 60 feet above sea level. One gravestone is noticeably large, roughly rectangular, and about 2 feet thick; from its cubic feet I estimated that it weighed between five and six tons. The stone is basaltic, and must have been brought at least ½ mile to its present position, as there is no

similar rock nearer. The old men of Maftau remember hearing from their fathers of the great feast that was prepared, after which it was dragged into its present position by sheer force of numbers.

The dead are now buried tied up in large mats, with sand round them; elaborate stones are sometimes put up. Certain carvings on some stones looked remarkable; I found later that they were copied from markings on crockery, after carefully, but unsuccessfully, digging up the stones in many of the old graveyards for traces of such. The use of these graveyards has now been entirely given up, and the people are buried in the English fashion.

XI. HOUSES AND THEIR FOUNDATIONS.

The house was in former days always placed on the top of a moderately high built-up foundation, or *fuagri*. Most of the modern foundations are about 3 feet high, a wall round filled in with earth, but there are scattered plentifully here and there old foundations up to 12 feet in height, formed of perpendicular walls of large blocks of stone on the outside, with in one place rough steep steps. The ground was in no case hollowed out to build these up. Two in the village of Noatau measure 93 feet by 39 by 10 high and 54 feet by 66 by 11 high; there is another at the south end of Noatau 13 feet high, quite square, with a terrace at 9 feet. In Oinafa is the large old *fuagri* of Tokaniua; it stands in the bush on the bare lava quite back from the village, and is somewhat irregular in shape. Generally through the bush are many isolated high foundations; usually around are smaller foundations, indicating a former centre of population. There are no signs but these of anything approaching a fort, unless graveyards were used for such too.

In the house (Fig. 5) six posts (*a*) are placed in two rows, about 6 feet apart from one another, while in the row they are 8 feet; they are about 7 feet high. About 6 inches below the top along the two rows on their outer sides are lashed with sinnet two beams (*b*). Across these and resting on their two ends outside the two pairs of outer posts are lashed two more beams, with two more one on each side of the centre pair (*c*). A flat beam rests on the centre of these (*d*), and from it arise four posts (*e*) which support the ridge pole (*f*) of the house. On the projecting ends of the beams *c* lie two more beams (*g*), to which two of the long roof beams are ultimately lashed. All the above is exceedingly massive; few of the timbers are ever less than 6 inches thick. The beam *d* is dovetailed on to the beams *c*, and the posts are sunk at least

4 feet into the ground. Outside the two lines of posts are put two lines more of three each about 3 feet away (*h*), while five more at each end are placed in a crescent shape; they are about 4 feet high. Lashed outside these rest beams right round the house (*i*); the roof from these slopes up to the ridge pole, but there are usually two more sets of beams (*k*), the lowest lashed to the beam *g*. As the pitch of the roof is naturally given by the part below this, the ridge pole is the last part erected. The timbers of this outside part are much smaller.

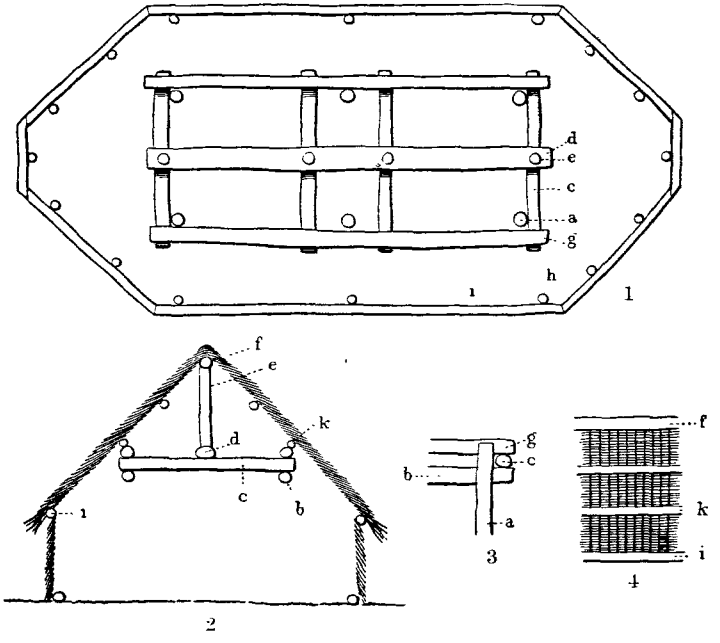


FIG. 5. THE HOUSE.
1. Ground plan of house. $\frac{1}{8}'' = 1'$.
2. Transverse section through house. $\frac{1}{8}'' = 1'$.
3. Corner of the central structure from inside.
4. Roof from inside.

Laths are lashed outside these beams up and down the roof, 3–4 inches apart. The framework at the ends of the house is carefully curved, and diminished up to the ends of the ridge pole. The thatch is made of the leaves of the *oat*, or sago palm. It is of two kinds: the *puara* and the *fatafiti;* the latter is used for the ridge, and the former for the roof and walls of the house, the separate pieces being lashed to the laths about 2 inches apart from one another. The roof is thus

thatched from below upwards; it overhangs the walls by a few inches only. There are two doors on each side and none at the ends. They are simply well-finished pieces of thatch strung together and suspended by sinnet to the beam above: to open they are simply pushed up from inside, but in the day-time are usually supported open by a stake. On each side of them is placed a post to prevent the walls from being broken down by people entering, and further to support the beams *i*. The walls, too, have additional supports as requisite under *i*. At their base right round the house beams are laid, giving a finish to the whole. The floor is covered with pieces of coral or water-worn pebbles, and these again with mats.

In the old days, one or both ends of the house were very generally curtained off by mats as sleeping-places, the walls being often lined with an extra thickness of thatch inside to keep out the *ramu*, or mosquito. Bamboos or sticks used commonly to be placed on the cross beams of the house to form sleeping-places, termed *fatafata*. The dimensions of the house given are taken from one on the island of Uea, where lime cannot be obtained, and these houses are always built. Many on Rotuma are larger, but are not as typical.

With the introduction of *soru*i, or lime, by the white man, houses began to be built with reed walls, plastered over, and thatch roofs: now houses are built of stone and plastered both inside and out. None, however, are as strong or stand a hurricane so well as the proper old house; its beams inside are of hard wood, and last practically for ever, while the storm passes lightly over its low-pitched roof and rounded gables.

Besides these houses for general use, the men had sleeping houses, *risi boki*, built on piles close to the sea, 50–80 feet high; they were mounted by means of a pole with notches cut in it for steps. They were occupied generally by the young men and boys to avoid the mosquitoes. There was, too, the *kohea*, or cook-house, a roughly constructed building, with open walls.

A necessary article in all houses is the *kuruga*, or pillow. Of these there is little variety, most of the true Rotuman ones very closely resembling the one represented in the figure.

(*To be continued.*)

DECEMBER 7TH, 1897.

E. W. BRABROOK, Esq., C.B., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

Dr. GARSON exhibited some lantern slides representing Dyaks of Borneo, from photos presented to the Institute by H.H. the RANEE OF SARAWAK. He also read a letter from Mr. F. MOSS, British Resident at Rarotonga, Cook Island, dealing with the Morphology of the Natives.

A vote of thanks was passed to Mr. MOSS for his communication, to the RANEE OF SARAWAK for his present of photographs, and to Dr. GARSON for his able presentation of them to the Meeting.

Mr. O. M. DALTON then read a paper by Miss ALICE C. FLETCHER, of Harvard University, on the "Significance of the Scalp-Lock," and Mr. BALFOUR and Prof. TYLOR pointed out the importance of keeping record of such rapidly dying-out beliefs and customs.

A vote of thanks was passed to Miss FLETCHER and Mr. DALTON.

The SIGNIFICANCE *of the* SCALP-LOCK. *A Study of an Omaha Ritual.* By Miss ALICE C. FLETCHER.

A BRIEF account of the Omaha tribe and its social organization will render more intelligible the ceremony during which the first cutting of the hair of the child takes place.

The Omahas belong to the Siouan linguistic group, and live to-day where they have dwelt for several generations—on the western bank of the Missouri river, within the limits of the State of Nebraska.

The tribe is composed of ten kinship groups (or gentes), bearing the common name To*n*'-wo*n*-gdho*n*, which means "a place of dwellings." The families of a gens, To*n*'-wo*n*-gdho*n*, pitched their tents in a particular order or form, which was that of a nearly completed circle, an opening being left as entrance way into

the enclosed space. This encampment was called by the untranslatable word, Hu'-dhu-ga. When the entire tribe camped together, each of the ten To*n*'-wo*n*-gdho*n*, while preserving its own internal order, opened its line of tents and became a segment of the greater tribal Hu'-dhu-ga, in which each To*n*'-wo*n*-gdho*n* had its fixed unchangeable place, so that the opening of the tribal Hu'-dhu-ga was always between the same two To*n*'-wo*n*-gdho*n*.

The Omaha word for tribe is U-k̈i'-ẗe[1]; the same word used as a verb signifies, to fight, to war against outside enemies; it would therefore appear that the necessity for mutual defence had impelled the various To*n*'-wo*n*-gdho*n* to band themselves together for self-preservation.

The sense of danger has not only exercised a profound influence in the development of the social structure of the tribe, and given to the warrior a position of vital importance, but it seems to have been equally potent in stimulating the growth of religious observances, wherein the feeling of insecurity and dependence has sought relief in rites which were believed to be the medium through which supernatural aid could be transmitted to men. This belief of the Omahas was based upon their conceptions of nature and of life. They regarded all animate and inanimate forms, all phenomena as pervaded by a common life, which was continuous and similar to the will power they were conscious of in themselves. This mysterious power in all things they called, Wa-k̈o*n*'-da, and through it all things were related to man, and to each other. In the idea of the continuity of life, a relation was maintained between the seen and the unseen, the dead and the living, and also between the fragment of anything and its entirety.

Perhaps the oldest religious practice known to the Omahas, was the No*n*'-zhi*n*-zho*n*, or rite of the vision. In this rite, the man by fasting and the chanting of prayers, sought to fall into a trance, in which he should see some object, that for ever after would be his particular medium of help from the supernatural. The symbol of this manifestation—which might be the feather of the bird, a tuft of hair from the animal, the small black stone, emblematic of thunder, or the pebble, representative of water—the man ever after carried with him, not as an object of worship, but rather as a credential, so to speak, as the fragment, to connect him with the whole power represented by the form which had appeared in his vision.

[1] The vowels have the continental sound; *n*=the nasal n; *h*=the rough guttural sound h; k̈=a sound between g and k; ẗ=a sound between d and t; ë=ë in ēve; ĕ=ĕ in nĕt.

This rite seems to have been always open to anyone, and its universal practice kept rooted in the mind of the people their peculiar belief concerning nature and life. The constructive force which lay in the ideas upon which this rite of the vision was based, is manifest in two powerful organizations which have grown out of it, and which have been largely instrumental in moulding the tribe; I refer to the religious societies, and to the To*n*'-wo*n*-gdho*n*.

The religious societies were composed of men who had become affiliated into a sort of brotherhood, on the basis of like visions. Those to whom the bear had appeared, formed the bear society; and those to whom the beings of the water or the thunder came, constituted the membership of the pebble, or, the thunder society. There is reason to regard these societies as the earliest form of organization known to the group of tribes which included the Omahas; they had a classification of membership, initiatory rites, rituals, and ceremonially appointed officials, and they exercised a power which transcended that of the ties of blood.

The To*n*'-wo*n*-gdho*n*—or gentes, as they will be called for convenience' sake—were kinship groups, practising exogamy, and tracing descent through one parent only—the father. Each gens had a distinctive name, which referred to its totem,—the special manifestation of wa-ko*n*'-da, which had appeared to the founder of the gens in his vision, and which his descendants held sacred by the tabu. There was also a set of personal names, one of which was bestowed upon each child born within the gens. These names referred directly or symbolically to the totem, and were called "ni'-ki-e," spoken by a chief, that is by the founder of the gens.

There is evidence that in the slow process of time, both disintegration and coalescing have taken place among the societies and gentes, until the totems of those that remain represent the elements and forces conceived to be most potent in the life of man, or those animals which largely contributed to his support, or were most difficult to conquer.

The functions of the gentes in the tribe were determined by the nature of their totems, for instance, the buffalo gentes regulated the quest of food—the planting of corn, and the hunt—while the thunder people dominated in the rites and ceremonies of the tribe.

The entrance to the tribal circle, or Hu'-dhu-ga, was guarded on the right as you enter, by the thunder gens, and on the left by the elk people, who were the keepers of the sacred tent of war, in which the worship of thunder was performed, as well as all the rites pertaining to war, of which thunder was the god, so

to speak. The commanding position of these two gentes, between which every one must pass who would enter the tribal circle, was typical of the all-embracing power conceded to thunder, which held in check not only all enemies from without, but was co-ordinated with the power of the chiefs within the tribe, and which met each child at its entrance into life, and controlled him even to the hour of his death.

It was the hereditary right of the I*n*-shta'-thu*n*-da, or thunder gens, to perform the ceremony at the first cutting of the hair of the Omaha child. This was done by a priest of the Wa-she'-ton division of the I*n*-shta'-thu*n*-da, which means "the quivering eye" (i*n*-shta, eye, and thu*n*-da, probably a corruption of tho*n*-da, to tremble; tho*n*-da is always used with a prefix which indicates the exciting cause of the quivering); it is a descriptive symbolic term referring to the flashing lightning. Wa-she'-to*n*, the name of the sub-division having charge of the rite under consideration, refers directly to this rite. The prefix wa, denotes action with a purpose; she, is from shi-e, a generic term for children, as, shi-e a-dhi*n*-ki-dhe, to beget children, and, shi-e-gi-dhe, to adopt children; to*n*, to become possessed of; the word Wa-she'-to*n*, therefore, means the act of possessing children. In the rite performed by this sub-division, the child passes out of the simple relation it bears to its parents and is adopted by the thunder god, and at the same time is reborn into the tribe, becoming an acknowledged member.

Before giving the ritual of this ceremony, a word of explanation is due as to its fragmentary nature and the manner of its recovery.

During the year 1896, my collaborator, Mr. Francis La Flesche, a member of the Omaha tribe, spent several weeks in ethnological research among these Indians, and was so fortunate as to secure valuable graphophone records of rituals hitherto unknown and unsuspected. In the case of the ritual of the rite of the first cutting of the hair, the hereditary priesthood had become extinct by death, but Mr. La Flesche was able to procure six fragments of the ritual from the only man living who had any memory of it. He was a man of some sixty years of age, of undoubted veracity, a near relative of the last priest, and an old and trusted friend of Mr. La Flesche's father, the former head chief of the tribe.

The ritual is rendered in musically independent songs, each having its motive, its modified variation, melodic phrase, clause and period. The scale in which the music has been transcribed, was determined by the graphophone records. Other singers might pitch the tune on a different key, but that would not

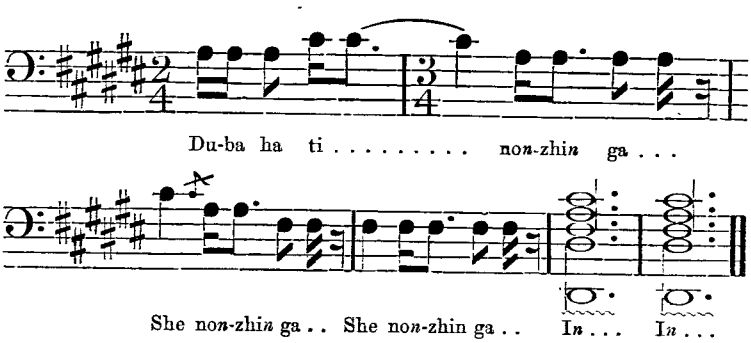
alter the relation of the intervals to each other, and a minor song would still be minor, and a major song retain its major quality. As music is a more flexible vehicle than language, it adapts itself more readily to the emotions, so that a study of the music helps to an understanding of the rite.

After the first thunder in the spring-time, when the grass was well up, the birds singing—"particularly the meadow lark" —the tribal herald went forth to proclaim that the time for the ceremony had come. The priest summoned the Wa-she'-ton to the vicinity of the lodge which had been erected for the ceremony, and had now become hu-be, or sacred. Meanwhile those parents whose children had arrived at the proper age, that is, were able to walk steadily and to go about alone, made ready to take their little ones to the sacred lodge. The only requisite for the child was a pair of new moccasins, which were generally embroidered for the occasion; but large gifts were demanded as fees by the priest.

The mother accompanied the child to the door of the sacred lodge, where she paused, saying, "Venerable man! I desire my child to wear moccasins;" and the little one carrying his moccasins, entered the lodge alone. He was met by the priest, who advanced to the door to receive the gifts brought as fees for the ceremony. Here he was addressed by the parent, who said, "I desire my child to walk long upon the earth; I desire him to be satisfied with much food; I desire him to be content with the sight of many days; we seek your protection; we hold to you for strength." To which the priest replied, addressing the child, "You shall reach the fourth hill sighing; you shall be bowed over: you shall have wrinkles; your staff shall bend under your weight; I speak to you that you may be strong." Laying his hand upon the shoulder of the child he added, "What you have brought me, shall not be lost to you; you shall live long and enjoy many possessions; your eyes shall be satisfied with many good things." Then moving with the child toward the fireplace in the centre of the lodge, he continued, "I am a powerful being, I move my lips over you." (He sings an invocation; Song No. 1.)

SONG NO. 1.





Translation:—

Come hither, and stand ye!
Stand ye near, in four groups;
In four groups stand ye;
Come hither, and stand ye
In four groups, in this place.
(*The Thunder Rolls.*)

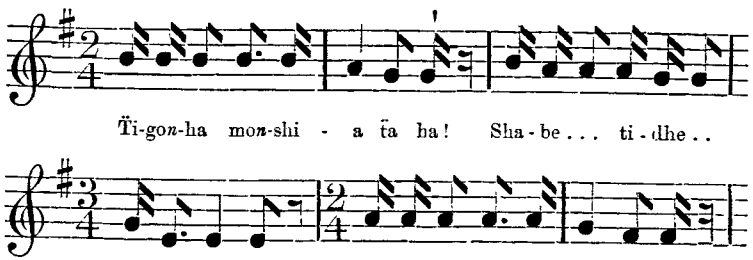
Literal rendering.—Du-ba, four; ha, signifies that the number refers to groups; ti, from a-ti, come ye; non-zhin, stand; a, from i-ga, the word of command addressed to a number; she, from she-dhu, a definite place near by; ga, a command and end of the sentence; *in*! imitation of the rolling thunder.

The music of this invocation lies along the line of the five-tone scale in F sharp major. It is noticeable that the voice dwells on the words, "ti," "come," and "she, near in this place." The roll of the thunder is given in the relative minor.

There has probably been something of the ritual lost at this point.

During the singing of the next song in our possession, the child stands between the knees of the priest, who gathers up a tuft of hair from the crown of his head, ties, and cuts it off, and lays it away in a *par-fleche* case, kept by the priest as a sacred thing.

SONG NO. 2.





Translation:—

Grandfather! there, far above, on high,
The hair, like a shadow dark flashes before you;
Grandfather! there, far above, on high,
Dark like a shadow, the hair sweeps before you
Into the midst of your realm.
Grandfather! there, far above, on high,
The hair, like a shadow dark flashes before you;
Grandfather! there, far above, on high,
Dark like a shadow, the hair sweeps before you
Into the midst of your realm.
Grandfather! there, far above, on high,
The hair, like a shadow dark flashes before you!

Literal rendering.—Ti-gon'-ha, grandfather, the form used when addressing the person; mon'-shi-a, far above on high; ta, from e-ti there, used to express an indefinite place; ha, end of the sentence; sha-be, dark

like a shadow; ti-dhe, passing before one; non-zhi'-a, human hair; she-dhu, there, in your direction; a-ha, in the midst of.

From the ritual we learn that the hair which is laid away in the sacred case, in care of the thunder priest, really goes to the thunder god, dwelling "far above, on high," who is addressed as "grandfather," the term of highest respect in the language. The hair was believed to have a vital connection with the life of the body, so that any one becoming possessed of a portion of it, might work his will upon the man from whom it came. In ceremonial expressions of grief, the throwing of tufts of hair upon the dead, and the laceration of the body (shedding the blood) were equal expressions of the vital loss sustained. The hair might be said, in the light of the customs of the people, to typify life; in this rite the life of the child is placed in the hands of the god, through the severance of the lock of hair and its transmission to thunder; thus illustrating the Indian's belief in such a continuity of life, as that a part must represent the whole. The sign of this consecration seems to have been a small lock on the crown, parted in a circle from the rest of a man's hair and kept constantly braided. Upon this lock the talisman and the war honours were worn by the warrior, and it was this lock which was cut from the head of a slain enemy, and formed the central object in the triumph ceremonies, for the reason that it pre-eminently represented the life of the man who had been killed in battle.

In the music of the song accompanying the specific act of cutting the hair, the melodic phrase passes through three related minor chords, indicating a range of related emotions. The long notes are those which carry the words, "Into the midst of your realm."

Again a break occurs in the ritual, and in the next song we have the thunder god speaking.

SONG NO. 3.





Translation :—

What time I will, then, only then,
A man lies dead, a gruesome thing ;
What time I will, then suddenly
A man lies dead, a gruesome thing.
What time I will, then, only then,
The man a shadow dark shall lie.
What time I will, then suddenly
A man lies dead, a gruesome thing.
What time I will, then, only then,
Reddened and stark, a man lies dead.
What time I will, then suddenly
A man lies dead, a gruesome thing.

Literal rendering.—She-dhu, there ; pi, I have been ; dhon-di, when ; he, end of the sentence and vowel prolongation ; ni-ka, man ; win, a or one ; gon-ke, a fearful or horrible sight ; a-dhe, I cause, used only in reference to inanimate things and intended here to convey the idea that man has no power to act independently of the gods ; sha-be, dark like a shadow ; zhi-de, red.

The word "sha-be," dark like a shadow, is used in the preceding song, No. 2 of the series, to describe the lock of hair, symbolic of life, which is cut from the child and offered to the thunder god. In the responsive song of the god, No. 3, the same word "sha-be" is applied to the man whose life has been taken by the god ; and we find that the musical phrase accompanying the words, "Sha-be ti-dhe non-zhi-a ha," (Dark

like a shadow the hair sweeps before you), in Song No. 2, is repeated, in No. 3, to the words, "Ni-ka wi*n* sha-be ke a-dhe he," (The man a shadow dark shall lie). A connection seems evident; the life is given to the god, and the god does with it as he will. There are other songs and ceremonies in the tribe, which iterate this belief; men die only when the gods decree.

The music of this song is in the five-tone scale of E flat minor, and the motive which carries the assertion of the god, rises and dwells upon the tonic, which is rare in Indian music, the general trend of the songs being from high to lower tones.

There is evidently a portion of the ritual missing before No. 4 of our series is reached. This song accompanied the special ceremony of putting the new moccasins upon the feet of the child.

SONG NO. 4.



Translation:—

In this place has the truth been declared unto you,
In this place has the truth been declared unto you;
And because of the truth here spoken to you,
Now arise! for a promise to you hath been given.
In this place has the truth been declared unto you,
Now therefore, arise! go forth in its strength.

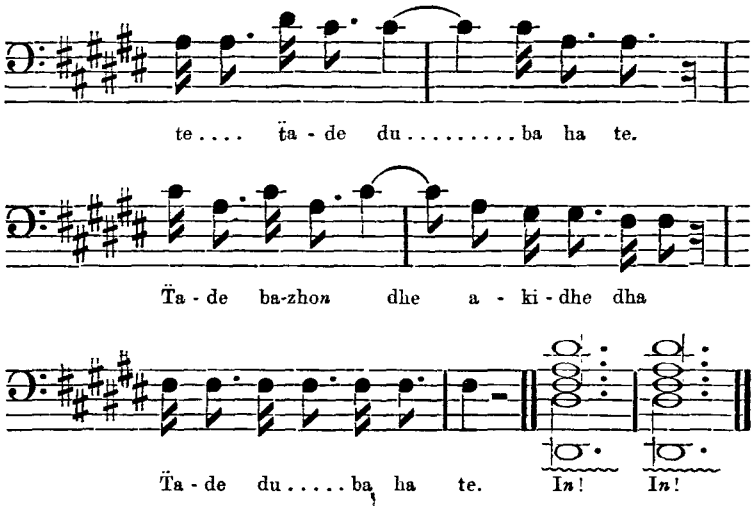
Literal rendering.—She-dhu, a place near, also a time; te, refers to an action or occurrence, in this instance, to the ceremony; dhon, a round place, refers both to the lodge and to the Hu'-dhu-ga; ī-ĕ, words, declaration; win-dha-ke, win-ke, truth, dha, to you; he-de, in consequence of, therefore, because (an old term); non-zhin, arise, stand; ga, the sign of command; in! the rolling of thunder.

Concerning the truth said to have been declared, a part at least has been preserved to us in Song No. 3; it is that the life of a man, who must become a part of the cordon of safety to his people, and ever be ready to meet the enemy at home or abroad, is in the keeping of the gods, and only when they decree can he fall. Armed with this assurance he goes forth strong to meet danger, and if need be, death. The music of the first four lines of this song is in E major, but with the last two the key changes to the relative minor, and seems to bring the general teaching home to the child, who is bidden to "go forth in its strength," this mandate being emphasized by the rolling of thunder.

At this stage of the ceremony, the first part, that in which boys alone had a share, came to a close. The name of the second part, open to all children, girls as well as boys, was "Dhi-ku-win-he," and means turning the child; dhi, action by the hand; ku-win-he, to turn. The priest takes the child to the east of the fire, then lifting it by the shoulders carries it to the south, where its feet are allowed to rest upon a stone or a buffalo skull, placed there for the purpose. There the priest turns the child completely around, then carries it in the same manner to the west, the north and the east, turning it upon the stone at each point, while Song No. 5 is sung.

SONG NO. 5.





Translation :—

Turned by the winds, goes the one I send yonder ;
Yonder he goes, who is whirled by the wind ;
Goes, where the four hills of life, and the four winds are standing ;
There, in the midst of the winds, do I send him,
Into the midst of the winds, standing there.
(*The Thunder Rolls.*)

Literal rendering.—She, from she-dhi*n*, going yonder, implies a person speaking ; ga-ku-wi*n-h*e, ga, to strike by the wind, ku-wi*n-h*e, to turn ; dha, oratorical end of the sentence ; ba-*h*u, ridge or hill ; du-ba, four ; ha, group ; te, descriptive suffix indicating standing ; ba-zho*n*, in the midst ; dhe, goes (in the third person) ; a-ki-dhe, I cause him ; dha, end of the sentence ; ta-de, winds ; du-ba, four ; ha, groups ; te, standing ; i*n* ! rolling of the thunder.

The elements invoked by the thunder priest, in Song No. 1, here seem to have had a part to perform. The stone, the bunches of grass which have been laid by the fire, and the buffalo skull, typified the venerable and the fruitful earth. The four groups of hills were representative of the four stages of man's life on the earth ; childhood, which was conceived to begin when the child was able to walk steadily, and be independent of its mother ; youth ; manhood ; and old age. The winds standing in four groups, into the midst of which the child was sent, symbolised the circumambient air, by which man is filled with health and strength, and enabled "to face in every direction" as he traverses the earth, and to meet the various vicissitudes he must encounter as he passes over the four groups of hills, and completes the circuit of a long life.

It was believed that this ceremony exercised a marked influence upon the child, enabling it to grow in strength and in the power of self-control.

The music is in the five-tone scale of F sharp major, while the thunder roll returns to the relative minor.

If up to the time of this ceremony the child had borne a cradle name, that name was now discarded and its *ni'-ki-e* name, assumed. This *ni'-ki-e* name—if it had not already been given with certain ceremonies peculiar to the gens—was now selected by the parents, and the mother repeated it to the child, bidding it, on entering the sacred lodge, to tell the name to the priest. After the turning of the child, its *ni'-ki-e* name was announced, the priest crying aloud: "Ye hills! ye grass! ye trees! ye creeping things both great and small! I bid you hear! This child has thrown away its cradle name. *Hi—e!*" (A call to take notice.)

The ceremony closed as it began, with an invocation. The priest picking up the bunches of grass and holding them aloft, sang Song No. 6; then he dashed them to the ground, where they burst into flames, and the child was dismissed as the burning grass illuminated the sacred lodge.

SONG NO. 6.





Translation :—

Come hither, haste to help me,
Ye flames ! ye flames ! oh come ;
O hot, red fire, hasten,
Oh haste, ye flames, to come,
Come speedily to help me ;
Ye flames ! ye flames ! oh come ;
O hot, red fire, hasten,
Oh haste, ye flames, to come,
Come hither, haste, and help me !

Literal rendering.—Coo-dhe, from dhe-coo-dhe, hasten ; *gon*, suddenly ; di, from e-di, here or hither ; *in*-gi, to ask assistance ; be, ba plural sign ; na-*hdhin*, flame ; ba, plural sign ; ha, end of the sentence ; pe-de, fire ; zhi-de, red ; na'-ka-de, hot.

The music is in the key of F major, and the long notes are upon the word "be," the sign of the plural, indicating that many are called to hasten.

Upon the return home of the child, the father cut its hair in a certain prescribed fashion which was symbolic of the totem of his gens, as, for instance, the boy belonging to the Turtle band had the head shaved, with the exception of a lock on the forehead, one at the nape of the neck, and two on each side. The bald crown represented the shell of the turtle, the front lock, the head, that at the back, the tail, and the two on each side, the four feet of the animal. Each year, on the anniversary of the ceremony of cutting the hair, until the time of the second dentition, the child's hair was trimmed in this symbolic fashion, in order to fix in his mind the totem that marked his particular kinship. The scalp-lock, the sign of his consecration to thunder, was kept carefully braided, no matter how frouzy and tangled the rest of his hair might be allowed to grow.

From the fragments preserved to us of this ritual, we are able to see the scope of the rite. Two distinct ceremonies seem to have been incorporated in it ; in one the boy was consecrated to the thunder god, who thenceforth became the arbiter of life

and death to the man. In the other, all the children were placed "in the midst of" those elements believed to bring to the race, health, strength; and the capacity for a long, fruitful and successful life.

There are reasons growing out of the study of other rites and ceremonies pertaining to the tribe, for looking upon the "turning of the child" as being probably the older ceremony of the two in the rite. It is less specialised, and is of wider application to the people, while that of "cutting the hair" seems to have grown up with the development of the *u-ki'-ie*, tribe—the union of the different gentes, To*n*'-wo*n*-gdho*n*, for mutual defence. In a community beginning to crystallise into organized relations, the sphere of the warrior would naturally rise above that of the mere fighter; and when the belief of the people concerning all nature is taken into consideration, it is not surprising that the movement toward social organization, should tend to place the warriors—the men of power—in close relation to those natural manifestations of power, seen in the fury of the storm, and heard in the rolling of the thunder. In other studies I have called attention to ceremonies instituted by the "leaders" in the interest of unification, and the ceremony we have just considered is an additional example; through it the people were to be welded together by the inculcation of a common dependence upon a powerful god, and the sign of consecration to him placed upon the head of every male member in the tribe.

PEABODY MUSEUM, HARVARD UNIVERSITY.
June 1, 1897.

Is Mrs. F. C. Smith *a* "Last Living Aboriginal *of* Tasmania"? By H. Ling Roth.

[with plates xxvi–xxvii.]

In September, 1889, Mr. Jas. Barnard read before the Royal Society of Tasmania a short paper entitled "Notes on the Last Living Aboriginal of Tasmania." This paper was practically a claim asserting that an old resident at Irishtown, near Port Cygnet, named Mrs. Fanny Cochrane Smith, was a pure blood Tasmanian aborigine and hence the sole survivor of her race. As we had been, since the year 1876, under the impression that with the death of Truganina no pure blood aboriginal survived, the claim was naturally much doubted by anthropologists. A reference to this paper was made in "Nature," November 14th, 1889, and the statement was, without apparent examination, accepted as a fact and reproduced by Prof. A. H. Keane in his "Ethnology," published seven years later (p. 294 note). I had, however, on receipt of a newspaper copy of Mr. Barnard's paper pointed out in "Nature," December 5th, 1889, reasons which to me appeared to be sufficiently strong for at any rate withholding my judgment on the question until further proof should have been forthcoming. The chief objections to our accepting Mrs. Smith as the survivor of the race were to my mind an absence of any description of her physical characteristics which could enable us to judge, and a general absence of proof of identity—for much seemed to depend upon the proof that she was a certain girl known at Flinders Island Aboriginal Establishment about the year 1848 *et seq.* I was not aware when I wrote that at the meeting ("Pap. and Proc. Roy. Soc. Tasm. for 1889," p. 64) at which Mr. Barnard's paper was read, one Fellow asked Mr. Barnard "not to press the matter too strongly on the Society. While Parliament was free to act at its discretion in entertaining a claim, the Royal Society would not be justified in showing any amiable weakness in the same direction. If, however, he threw out a challenge to ethnologists, he ran the risk of depriving Fanny Smith of what she now enjoyed," for Parliament, accepting her claim, had granted her an annuity. It was therefore evident that locally Mrs. Smith's claim met with no scientific support.

Since that date I despatched to Port Cygnet a brother of Mr. J. W. Beattie, the well-known Hobart photographer and present possessor of Woolley's negatives of Tasmanian aborigi-

nals. He was successful in getting me three photographs of Mrs. Smith—full face, three-quarters, and profile. He also obtained a lock of her hair, but from what portion of her head he does not state. Mr. J. W. Beattie has sent me several particulars of her from two correspondents of his, the one the Rev. A. T. Holden, formerly Wesleyan Methodist minister at Port Cygnet, the other a Mr. Geeves, an old resident at Hobart. Mr. Holden says she is about 5 feet 6 inches in height, while Mr. Geeves says she is about 5 feet 2 inches or 5 feet 3 inches; the latter says her colour is dark brown or olive, and the former speaks of her "curly" hair. She appears to be a very religious, hard-working woman with a numerous family, viz., six boys and five girls, and about thirty grand-children (Geeves). She can read and write well, appears to be a very fluent and popular speaker, and "apt in illustrations drawn from her aboriginal life and associations" (Holden). Both correspondents are of opinion that she is an aboriginal, and she certainly thinks so herself (Holden).

To come to definite detail, however, in the absence of any other living representatives now we must confine ourselves to a comparison of photographs of Mrs. Smith with those of Truganina, who died in 1876, and who was a pure blood aboriginal without any doubt.

The five characteristics of Truganina's face in common with those of her fellows (Dr. Garson in H. Ling Roth's "Aborigines of Tasmania," p. 195) are (1) the wild appearance due to the great development of the facial portion of the frontal bone and the deep notch below the glabella at the root of the nasal bones; (2) the shortness of the face; (3) the smallness of the lower jaw; (4) the very dark skin; (5) the woolly nature of the hair.

Comparing these facial characters with those of Mrs. Smith we find (1) less development of the frontal bone less deep notch below the glabella; (2) a longer face; (3) a normal lower jaw; (4) a lighter skin; (5) the hair woolly on the forehead and wavy on the temples—altogether a Europeanised type of countenance.

If we now turn to Fig. 3, where I have arranged a set of profiles, traced and reduced from Mr. Woolley's photographs, and compare them with that of Mrs. Smith (Fig. 4), we find:—All have a receding upper forehead, while Mrs. Smith's rises higher than any. Excepting W. Lannay (as to whose parentage there is some doubt—it having been said that the notorious Sydney aboriginal Mosquito was his father) all have very projecting brows; Mrs. Smith's are not so beetling as any of them. All have the deep notch at the root of the nose; in Mrs. Smith's profile this is not so marked. The eyes in all, including Mrs.

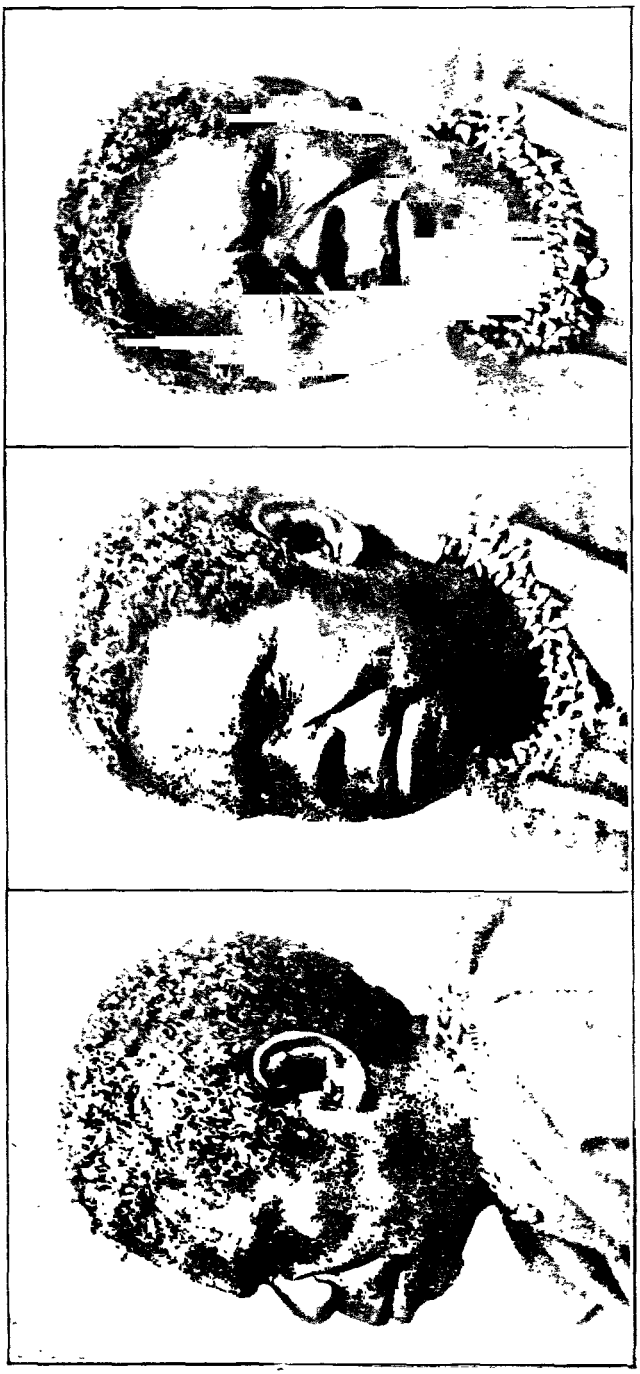


FIG. 1. TRUGANINA, DIED JUNE, 1876.

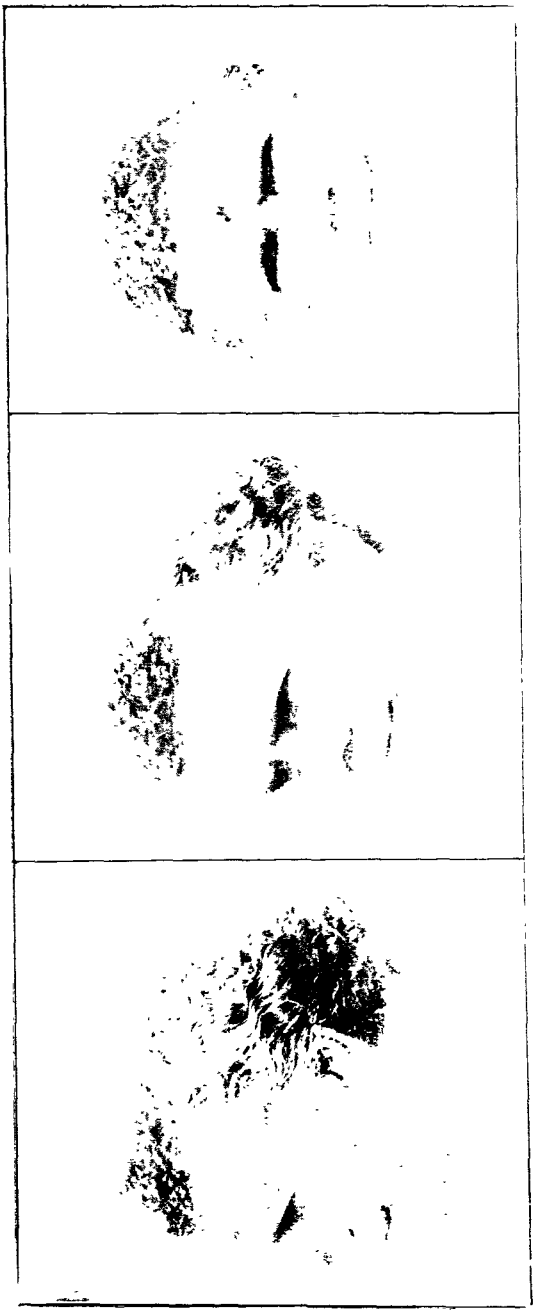


FIG. 2. MRS. FANNY COCHRANE SMITH, OF IRISHTOWN, PORT CYGNET, TASMANIA.

Smith's, are deeply set. The noses in all may be termed stumpy and broad, while Mrs. Smith's is decidedly longer and narrower, and her whole face is proportionately longer. There is little prognathism in any of the faces, while in Mrs. Smith's face there is less. The lips in all, as well as in Mrs. Smith's, vary very much. The chins are weak, while Mrs. Smith's is decidedly stronger. The result we arrive at is then the same as in our first comparison.

Regarding the evidence as to hair, Prof. S. J. Hickson, F.R.S., who has kindly examined Mrs. Smith's lock, reports to me. "If I

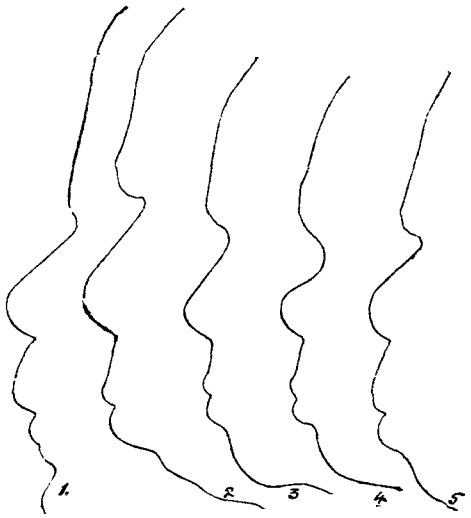


FIG. 3.

1. William Lannay, with beard.
2. Wapperty.
3. Bessy Clerk.
4. Patty.
5. Truganina.



FIG. 4.

6. Mrs. F. C. Smith.

had no further evidence of the owner's race than her hair, I should say she might be either Tasmanian or Andamanese." In reply to further inquiries, he writes me: "I should be quite prepared to find in any half-caste, hair of the exact form and colour of one parent. I have seen thousands of half-castes between Malays and Europeans, and I have often observed that the aboriginal parent's influence predominates in a marked degree in the matter of hair. Nearly all these half-castes have the coarse black hair of the Malay. The point of deviation between the

specimen of Mrs. Smith's hair and the hair of other Tasmanians I have examined, is that the average curl is rather bigger, viz., 10 mm. instead of 5 or 6 mm.; but I do not lay much stress on this, as the hair may have been brushed." As mentioned above, I do not know whether the specimen was taken from the top of the head or from the sides—from the examination it would appear not to have been from the sides, as in the photographs it is shown as wavy.

To digress a little, it is very curious that there should still be doubt as to the woolliness of the hair of Tasmanian aboriginals. Professor Ratzel in his "Volker Kunde" (2nd ed. German, I, pp. 350 and 351), besides other mistakes about the Tasmanians, gives a portrait of Wm. Lannay with woolly hair, and one of Truganina with curly hair. Dr. Topinard does not go so far, but he sees a difference, probably due to the engraver's art, unless he is referring to the natives' hair in its natural and artificial states, for he says, "Dans le livre de M. Bonwick sur les Tasmaniens etaient representées deux sortes de figures, les unes avec des cheveux en petites boules éparses, les autres en boucles tres longues" ("Bull. Soc. d'Anthrop.," Paris, 1878, 3rd Ser., I, p. 63).

As regards the colour of the skin as above mentioned by Geeves, his description tallies with that of Backhouse and Milligan, but is contradictory to that of most other observers; hence as well as on account of the generally loose way in which skin colour is described it had better be left out of consideration here.

From the above comparisons we may, I think, now venture to conclude that, while Mrs. Fanny Cochrane Smith's facial characteristics partake largely of those of the Tasmanians, still there is a considerable modification in almost every feature which tends to show that she is of mixed blood. Hence we cannot consider her a true Tasmanian aboriginal, and must conclude that with the death of Truganina we have lost for ever a living representative of the Tasmanian race.

ANTHROPOLOGICAL MISCELLANEA AND NEW BOOKS.

Readers of the Journal are invited to communicate any new facts of especial interest which come under their notice. Short abstracts of, or extracts from letters, will be published at the discretion of the Editor. Letters should be marked "Miscellanea" and addressed to The Secretary, 3, Hanover Square, W.

"Navaho Legends." Collected and translated by Washington Matthews, M.D., LL.D. With introduction, notes, illustrations, texts, interlinear translations, and melodies. (Boston and New York. Published for the American Folklore Society by Houghton, Mifflin & Co. 1897.)

The American Folklore Society has rendered good service to anthropological studies by the publication of this interesting and important contribution to the study of aboriginal traditions. The Navaho (formerly written in Spanish fashion *Navajo*) tribe is a branch of the Athabascan stock, though not unmixed, occupying a tract of arid upland, chiefly in the territories of Arizona and New Mexico. The people rudely cultivate the soil, and tend large herds of sheep and goats, obtaining from the latter their principal food-supply and wealth. During recent years they have formed a subject of study by American ethnologists, and valuable collections illustrating their arts and customs are to be found in the National Museum at Washington. Dr. Matthews has been initiated into their ceremonies. To him we owe numerous papers which throw considerable light on their culture, such as that on "Navajo Weavers," in the third, and "The Mountain Chant, a Navajo Ceremony," in the fifth "Report of the Bureau of Ethnology."

The legends published in the present volume are three in number: a lengthy origin legend and two rite-myths. "By a rite-myth is meant a myth which accounts for the work of a ceremony, for its origin, for its introduction among the Navahoes, or for all these things combined. The Navahoes celebrate long and costly ceremonies, many of which are of nine days' duration. Each ceremony has connected with it one or more myths or legends which may not be altogether mythical." Rite-myths consist of two parts: the exoteric and the esoteric. The latter are known in their complete form only to the priests of the rite, and comprise "minute and often tedious particulars concerning the rite, its work, symbolism, and sacrifices." As here given, these particulars are omitted, the exoteric, or narrative, parts being

alone set forth, though the rest is occasionally referred to in the notes. The origin legend is one of great interest, especially what relates to the adventures of the coyote, which include many incidents common to the Old and New Worlds.

A point in the organization of the Navahoes to which attention should be directed is the small trace of totemism to be found among them. The names of the gentes are almost entirely local; nor is any evidence of clan totems known to exist at the present time. Having regard to the theory of Miss Alice Fletcher and Dr. Boas put forward at the Toronto meeting of the British Association and to recent controversies as to the place of totemism in religious evolution, it is desirable that all the Navaho traditions be searched for indications of its existence and influence.

The volumes published by the American Folklore Society are of high ethnological value. The Society is by no means so well known in this country as it should be; and there are only two subscribers on this side of the Atlantic to the Memoirs, of which the volume before us is the fifth. This is not very encouraging as an index of scientific interest in the subjects dealt with. A work like the present is a substantial addition to our knowledge, and its value will be recognized by every student of civilization. The plates, map, and figures in the text are all excellent, and form real illustrations, real aids to understanding the letterpress.

"The American Anthropologist," in Nos. 9, 10, 11, and 12 of vol. x, contains amongst other articles:—"The Significance of John Eliot's Natick," by William Wallace Tooker; "The Verification of a Tradition," by Frederick W. Hodge; "Bandelier's Researches in Peru and Bolivia," by Frederick W. Hodge; "Anthropology at Detroit and Toronto," by W. J. McGee; "Archæological Map of the State of Ohio"; "The Aborigines of Formosa and the Liu-Kiu Islands," by Albrecht Wirth; "Northern Elements in the Mythology of the Navaho," by Franz Boas; "On certain Stone Images," by Cyrus Thomas; "Geographical Distribution of the Musical Bow," by Otis T. Mason; "Trephining in Mexico," by Carl Lumholtz and Ales Hydlicka (illustrated); "Analysis of the Deities of Mayan Inscriptions," by Lewis W. Gunckel (illustrated); "A Copper Mask from Chimbote, Peru," by George A. Dorsey (illustrated).

"Revue Mensuelle de l'École d'Anthropologie de Paris," in Nos. I and II for 1898, contains amongst other articles:—"Nécessité de l'Assistance des Dégénérés Inférieurs," by H. Thulie; "Grottes Ornées de Gravures et de Peintures," by G. de Mortillet.

"Journal of the Anthropological Society of Tōkyō," in Nos. 140 and 141 of vol. xiii, contains:—"Anthropological Study about Eta," by R. Torii; "Criticism on the Anthropological Views in Several Text Books, recently published in Japan," by D. Satō; "On the Ancient Pottery from Corea," by K. Nonaka.

THE JOURNAL

OF THE

ANTHROPOLOGICAL INSTITUTE

OF

GREAT BRITAIN AND IRELAND.

The NATIVES *of* ROTUMA.

By J. STANLEY GARDINER, B.A., Gonville and Caius College, Cambridge. (Communicated by Professor ALEXANDER MACALISTER, M.A., F.R.S.)

(*Continued from p.* 435.)

XII. CANOES AND DRUM.

[WITH PLATE XXVIII.]

Of canoes two kinds are now made: a big one, used for fish-driving, the *tafaga*, and a small single one, used inside the reef in the boat channel, the *tavane*.

The *tafaga* (Fig. 6, 1) vary from 25–35 feet in length, take from eight to twelve paddlers, and carry upwards of twenty people. A suitable tree is selected, cut down, and roughly shaped. It is then properly allowed to lie for a few months, after which it is dragged down to the *hanua noho* (village) which is going to build it. It is then hollowed out to the desired shape, the ends being left solid and the walls up to 2 inches thick. In the centre the sides would not be strong enough to bear the strain, and so are removed, fresh planks being fitted into their place. These are fixed by sinnet, holes for the lashings being bored through the planks; wedges are

then driven in between from the inside to make the whole watertight. The sinnet makes the holes watertight, but pieces of sponge from the reef are driven in to ensure it. There is a distinct bow and stern, the former sharp and pointed up, the latter blunter and curved downwards. The first 3 feet of the deck at each end is covered. The breadth along the whole centre is about the same: $1\frac{1}{2}$–2 feet. The side towards the outrigger, or *sama*, is slightly straighter (Fig. 3) than the other. The outrigger is about 5 feet or rather less away; it is not quite half as long as the whole canoe. It lies usually on the right, or starboard, side, and consists of a post of light wood

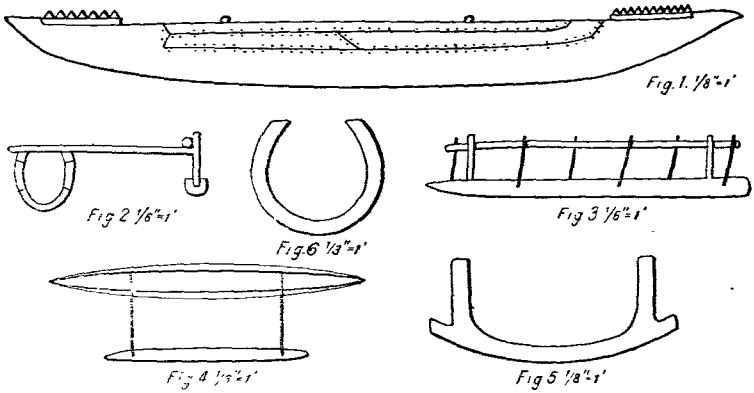


FIG. 6.—THE CANOE AND DRUM.

Fig. 1.—Side view of the *tafaga*, showing planks let in at the side, also bow and stern.
„ 2.—Section of the *tafaga* through one of the supporting beams of the *sama*, or outrigger.
„ 3.—Side view of the *sama* to show method of fixing.
„ 4.—Top view of the *tavane*. The thin lines at the sides show the bulge of the canoe.
„ 5.—Longitudinal section through the *oie*, or drum.
„ 6.—Transverse section of the *oie*.

(The scale should be multiplied by $\frac{4}{5}$.)

slightly pointed at one end. This is supported by two hard wood beams, driven into it, lashed across the canoe itself; the bend at right angles, which is necessary, is cut out, but can be, and was, frequently induced in the growth of the timber. Another beam runs just above the bend between these; to it rods of hard wood are lashed, previously driven into the post underneath (Fig. 2). A platform is generally made to take the paddles and carry the nets between the canoe and the outrigger; the paddle blade is of an oval form, 2 feet long by about 6 inches broad. The bailer is of the regular type, of one piece of wood

with handle in the centre, and shaped to fit the canoe. The launch of one of these used to be the occasion of a feast. *Kava* was placed for the gods, after one of whom it was named and then supposed to be under his special protection.

The *tavane* is only about 12 feet long and 8–10 inches deep; at the top it is usually about 6 inches broad, but bellied out considerably underneath. The outrigger is about 8 feet long and supported merely by two crooked sticks, lashed across the top of the canoe.

The *oie*, or drum, is always stationary, and usually of very large size; it has generally a special roof. Its general shape (Figs. 5, 6) is the ordinary, but it is much more bellied and cut out deeper at the ends than is customary in Fiji.

The double canoe is not known now, and only one is specifically remembered; it was termed *ahoie*. In legends it is always referred to as the *ahoie* or the *te bau rua*; the former term I do not believe to be derived from English. Canoe-sailing is a forgotten art, but the language possesses all the necessary terms for it. The sail is said to have been made of the fine mats. There is in the island one steer oar, belonging to a canoe of about 60 feet in length, judging from the relative length of the steer oar to the canoe in Fiji.

XIII. STONE AND SHELL AXES.

Stone axes (Plate XXVIII, Figs. 1–3) were made of a very fine-grained basaltic rock common in the island, or of dense lava rubbed down to the proper size and form; they were termed *ia hofu*. They were mounted on an elbow stick, as is general in the South Pacific. In shape they are roughly rectangular, flattened above, below, and at the sides, with one end bevelled away. Proportionately to their size, they are remarkably thick, and the angle of their cutting edge is very blunt. Between Figs. 1 and 3 there is an almost perfect series of four axes in my collection, but two of them have their sides near the butt considerably rounded. There is one axe smaller than Fig. 2, but it appears to have been considerably knocked about and chipped. The cutting edge in Fig. 3 is much more acute than is general, while another is also slightly more acute, but has the lower surface flattened, while above it is somewhat rounded. A rough axe of lava has its sides rounded, and is proportionately considerably thinner than any of the above. The axe represented in Fig. 10 was dug up in the grave of the *mua* (p. 464); it is termed the *voi ronu*. It is a singularly well finished and polished specimen. It was used by no one except the *mua*, but I could get no information as to how it was mounted. There is

no sign of its ever having been mounted on the top of a stick or in a forked one, but if fixed in any other way there would be no object in having both ends sharpened.

The smaller axes are nearly all made from shells, the principal ones used being the clam (*Tridacna sp.*?) and a large spider shell (*Pterosceras bryonea*). They are as far as possible squared, but taper away from the bevelled end considerably. Between Figs. 4 and 5 are four intermediate forms; one is 2½ inches long, cutting end 1 inch broad, but the other only ¼ inch. Fig. 6 is the smallest; it has been ground out of a very small *Tridacna*, and still shows the lines on the shell very well. A piece of shell, roughly squared and ground down somewhat at one end, is apparently a half-finished axe. There is also a stone axe smaller than any of these, 1½ inches long by ¾ broad and ⅙ thick; it has the same general shape as the above, but possibly its use was different.

I have five shell and one stone implement, used for scraping the pandanus leaves for mats (p. 419). The shell ones are all of *Tridacna*, and are squared as far as possible, but taper slightly. There are two intermediate between Figs. 7 and 8, while the fifth tapers very slightly, and very closely resembles the stone form (Fig. 9).

XIV. THE SOU AND HIS OFFICERS.

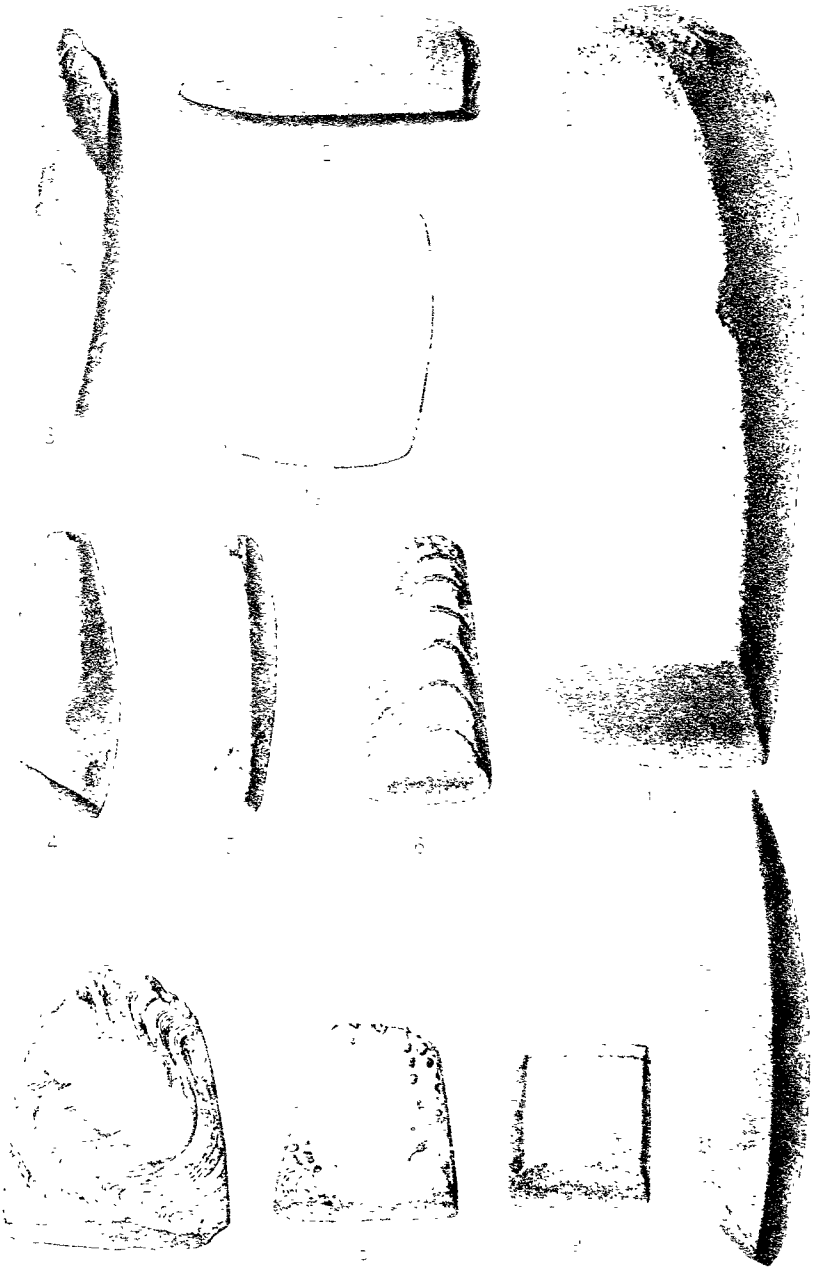
The head chief of the island, or *fakpure*, was also one of the officers of a spiritual chief, who was termed the *sou*, but who really had little to do with the government of the island, and who lived wherever he was placed by the *fakpure* and the other chiefs. The position seems to have been directly comparable to that of the *how* of Tonga,[1] but, while the latter had considerable temporal power, the *sou* had none. There are indications, however, that the two functions, spiritual and temporal, were not always separate, in some of the privileges of the *sou*, and in his officers and their duty towards him. In the legend of

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Explanation of Plate XXVIII.

Fig. 1.—Largest stone axe, seen slightly from the side.
„ 1A.—Transverse section of same, by ⅔.
„ 2.—Intermediate shaped stone axe to Fig. 3, by ⅔.
„ 3.—Narrowest stone axe with most acute cutting edge, by ⅔.
„ 4 and 5.—Side views of two shell axes, by ⅔.
„ 6.—Top view of thinnest shell axe, by ⅔.
„ 7, 8 and 9.—Implements for scraping clean the leaves for mats. Figs. 7 and 8 are of shell, and Fig. 9 of stone, by ⅔.
„ 10.—Side view of the *voironu*, a stone axe peculiar to the *mua*.

[1] See Mariner, *loc. cit.*



Rahou (Sec. XXV, *a*), he is described as making a great chief in Rotuma, who is called *Souiftuga*, while in the legend about the coming of the *kava* (Sec. XXV, *g*) the office is held by a woman, the conqueror in a recent war. The woman's name, *Souhoni* (the woman *sou*), is at the present day a very big name and restricted to certain *hoag*; indeed, it is the only woman's name, about which I found any restriction as to use. In a list (App. I) of the last sixty *sou*, all are men, but in many legends the names are those given to women at the present day. Inquiry merely brought out that that was before the Tokalau, or Gilbert islanders, came to Rotuma, but no further explanation was ever forthcoming. Possibly the connection was in Fonmon, a Noatau *sou*, who is supposed to have got the best-looking girls from each district, and ordained that from his offspring with these the *sou* was to be chosen; the name is the same as that of the man who brought the Tokalau people on shore (p. 403). Before this all the *sou* are stated to have come from Noatau.

The appointment to the office was for a term of six months, each district taking it in turn to appoint. The old *sou* however could continue as long as he liked, or as long as he could manage to get together the great masses of food that he was required to provide. The Rotuman year likewise consisted of six months: *Noatauta*, *Houeata*, *Fosuoghouida*, *Kasepta*, *Afopugida*, and *Oipapta*. The list is approximately the same as given by the Wilkes Expedition (p. 402), but there is the month *Taftafi*, which corresponds to *Noatauta*. Probably the former name was the correct one, and the latter a modern one from the great feast held in that month in Noatau. *Kasepta* and *Afopugida* too in my list have changed places. *Oipapta* is stated to correspond to January and July, but my information reversed this order and made it correspond to June and December. The division into months was stated to me not to have been into moons, but to have been arbitrary, each consisting of a certain number of days, but not the same number in each month, while the sum total was the same as with us. Unless record was very carefully kept of days, I fail to see the method. Crops do not come regularly in such low latitudes, but vary much in accordance with the time of planting. The coming of certain fish on to the reef however is very regular and well known, as is the breeding of the different species of birds; there is also the fructification of the breadfruit in October. All the same, I doubt whether a month was not rather a moon, and the Rotuman year six moons; an English year would then be two Rotuman years and one month.

The *sou* had as attendants a number of officers whose duty it

was to protect him, at the risk of their own lives, even if he was fighting with their own districts; they were drawn out of all the districts and supposed to be representative men of each. If the *sou* was killed in war, they were all killed too, if they did not die fighting. Their bodies, however, were not mutilated, and were always given back to their own districts to bury. Their names or titles were in order of precedence *mua* (chief priest), *hagnata*, *titopu*, *fakpure* (head chief), *fanhoga* (wife to *sou*), *fahoa*, *fagata*, *tonhida* (messenger), and *nafuida* (the presiding officer over all feasts).

The dress of the *sou* consisted of a fine mat, over which the *malhida* was worn. This dress was made of the leaves of the *saaga* (*Pandanus sp.* ?), split up, and plaited together like sinnet at the top, and hanging down loose. They were stained for the most part red, but some might be left white. Black was sometimes introduced by means of the bark of the *si*, a species of banana, which on drying turns a dull black. Another dress, pertaining to some of the officers, was the *ŏlōli*; it appears to have been really a sort of apron, made of a fine mat, and hung down in front. It was almost completely covered with the red feathers of the *arumea* (*Myzomela chermesina*, Gray); its use was restricted to particular feasts. Round the neck might be a necklace of beads of whale's teeth, the *tifui lei*, and on each wrist was the *mulcli*, described to me as a round piece of turtle bone. I dug up one when I opened the graves of the *mua*; it is certainly not bone, but resembles somewhat the horny and prismatic layers of the outer part of a pearl shell. It is about 2 inches in diameter, and has a large hole in the centre (Plate XXV, Fig. 7). On the breast was the pearl shell, *tiaf hapa*, but the really distinctive part was the *malhida*, which it was taboo for any one else to wear. The *mulcli* was only worn by the *mua* as well as the *sou*, but the other ornaments were more generally used.

The duty of the *sou* was simply to see after the proper performance of the various feasts, all of which had some religious rites. He was however in no way under the priests of the different *atua* (p. 468), nor does he seem to have had any connection with them. It was his business to preside over the feasts, and, whatever might be desired, he had to pray for at the same time as he poured out the *kava* to the god. He was, when *sou*, under the protection of this god, and could not be harmed by spirits and ghosts. He lived where he was put, but at the new moon it was his own district which had to bring food. First-fruits from all the districts had to be presented to him, and it was the business of the *fakpure* to look after this and see that they were properly paid. If he desired a new

fanhoga, he simply had to give the *fakpure* the name of the girl he had chosen, and she remained with him till he gave up his office or sent her away.

Of the other officers, the *hagnata*, *titopu*, *fahoa*, and *fagata* formed with some of their people a special guard for the *sou*, always accompanying him; they usually belonged to four several districts. They were armed with spears, which in times of peace—*i.e.*, if the *sou* was not engaged in a war—always had their ends covered with a strip of banana leaf, tied on. Two of these spears, or *jou*, obtained from Rotuma, are very remarkable; they were evidently spliced on to a handle, which was said to be of soft wood. The splice is 6–7 inches long, not cut in one, but really in two parts, in such a way that it could not possibly by any chance slip. Above this the spears have a length of 3½ feet carved, and on the end of one are fixed the spines of the stinging ray with sinnet; there are three perfect spines, and there is also the butt end of a fourth, the rest of which has broken off. These spines have along their edges recurved teeth, so that, when thrust into any one, they can only be extracted with difficulty and make a very jagged wound. If left in the wound, after being broken off, they gradually work their way through the body and come out elsewhere. Any one meeting the *sou* had to pay the proper marks of respect: to sit down at the side of the path, lower the hair, and cover the face. Failing to do so, they would have the spears thrust into them, the stinging rays broken off, and also the soft wood handle; the spear would then be grasped in the hand, and the offender thrust at with the spliced end.

The *sou* commences office in *Noatauta*, and at once the district in which he is placed holds a big fish-drive, and on the following day a feast; this feast and fish-drive is termed the *kako-sose* (the washing in the salt water), and was supposed to purify the *sou* for the biggest feast in the year, which almost at once followed, the *tofi*. The *tonhida* was sent round the island to tell the people, and at the same time seized all food, pigs, cloth, mats, etc., he saw on the road; he was usually accompanied by all the boys to assist him in seizing and carrying the things to the *sou*. On the day, the *sou* was stuffed out to as large a size as possible with mats and sticks, and dressed for the first time in the *malhida* and *muleli*; he sits on the right under an awning alone, with his officers in another opposite to him, and the people on one side. The *mafuida* calls out the name of the *sou*, addressing him on this occasion as *Faupa*, on which the *tonhida* causes the food which the *sou* has had prepared to be brought forward and piled up in the middle; it was supposed to be larger than any pile which should be prepared and

brought during that day. Next the near relatives of the *sou* are called, and they have to make a heap nearly as big. In succession come the *mua* and his people, and the different districts likewise; a few small heaps, too, used to be made for the dead *sou*, and were the perquisites of the priests. The *sou* and the *mua* exchange heaps, and the different districts likewise; there are no heaps for the other officers of the *sou*. The *kava* is prepared, and after being called and poured out to the different dead *sou*, is called to the living *sou* and his officers in the given order. The chewing, which is performed as usual by the women, is presided over by the *fanhoga*. After the feast the *fanhoga*, too, divides out the residue to the several officers and districts, which take it home with them. Separate presents of food and mats used to be brought to the *sou* at the same feast by all the districts.

Another feast nearly as big, the *sisiolda*, almost immediately used to follow in Noatau on the top of the hill of Seselo, where the *sou* are buried. The *kava* is poured on to the graves of the several *sou*, and the living *sou*, after receiving it, has to eat of all the different grasses on the hill. Two small feasts follow at Ranulda and Vaimossi, where two *sou*, killed in war, were buried, the latter by the Niuafoou people. All the *sou* were buried, quite independently of their district, on this hill, but the flat top was divided roughly into separate graveyards for the several districts. The one belonging to Itomotu is characterised by its large flat basaltic stones; there is only one for Pepji and Juju, and that of Noatau is very large. Many of the stones are immense; one belonging to a Noatau *sou* is of beach sand rock, about 10 feet long by 9 broad and 5–6 inches thick, and another is represented by a small cannon obtained probably from some whaler. The bodies are recumbent and buried about 6 feet deep.

In *Houeata*, there is a big feast in Oinafa, to which all go except the *fanhoga*; in *Oipapta* there are three big feasts in Juju, Malaha, and on Muasolo. At the first the *sou* is not present, but the *mua* takes his place, and to the third the *fagata* goes as the *sou*, dressed in the *malhida*. As soon as it is over he returns the *malhida* to the *sou*, and at the same time smears him plentifully with the turmeric, or *mena*, with which he is covered; he then retires by the back door, and on the following day his people have to get ready a big pile of food and bring it to the *sou*. The *mua* were all buried on Muasolo, a small hill near Lopta, in Oinafa; there were two holes for the purpose, in the one of which only the *mua* from Oinafa were placed. The position was a sitting one, with the *tiaf hapa*, or pearl-shell breastplate, round the neck, and between the legs

the *voironu* (Plate XXVIII, Fig. 10) was placed. The holes were simply covered over by a mat, but otherwise open; over them was a native house. When a former *mua* died, he always had to be buried by the living *mua*. With him, but with no one else, was usually placed a piece of the bark of the breadfruit tree, so that he might have a crop in the next world. Fouma (Sec. XXV, *d*) is supposed to have told them where to bury the *mua*, and to have built the house there. For this the people had to cut posts and bring sinnet. Two men, however, from Savelei omitted to do so. The whole is finished except one end, for which two posts are wanted; so Fouma drives one of these men into the hole and places the other as a crosspiece over him. A large hole is dug underneath, and the people are told to bury all the *mua* there, but never to fill up the hole.

At the feast the house was always rethatched, the old thatch being equally divided, to ensure the possessors a fruitful season. When this was completed, the *kava* was prepared, and a whole *tanoa* poured out to the dead *mua*. A great quantity of food is then placed in the house, as this feast differed from all others in that no food could be carried away from it. The *mua* alone can enter the house, and so has to carry all the food in. The old people, both men and women, while he is doing so, walk in procession round the house, while a prayer for a fruitful season is chanted, each fruit being mentioned by name.

Te moiea naragosou, mua	Be fruitful, mighty spirit, *mua*.
E te moiea favorou, mua	Be fruitful to the fava tree, *mua*.
Te moiea se, ōh, ōh. ōh	Be fruitful to us, ōh, ōh, ōh.
Moiea iſi, ma moiea fava....	A fruitful *iſi* and a fruitful *fava*.
Te moiea se, ōh, ōh, ōh. etc., etc.....	Be fruitful to us, ōh, ōh, ōh, etc., etc.
Se le mua le; sol, ōh, ōh, ōh.	
Uktrua-ōō.	

The language is antique, and now nearly forgotten; I could get no translation to the last two lines. The third and fourth lines are repeated with the names for all other fruits substituted for the *iſi* and *fava*; *uktrua* is supposed to mean that it is finished. All carry during the ceremony a stick, the *poki*; it is held over the head with both hands and moved rhythmically to and fro with the singing. The *naragosou* was explained to me as the head of *Limari*, the abode of departed spirits, and also as the god of the winds, rain, and sun, but Marafu identified him as being the same as *Tagaloa Siria* (Sec. XV).

During *Noatauta*, *Houeata*, and *Oipapta*, on account of all these feasts, marriage used to be forbidden, except the parties had been formerly married; the idea was that it would cause a great deal of work in preparing the feast. During the other three months, all planting and house-building had to be done.

The *sou* was left alone, but was not allowed to relax in any part of his state or to go anywhere by himself.

Peculiar, I believe, to the *sou* was a stool with four very thick legs, and carved out above so as to fit the body, when seated on it. Its height is about 10 inches at the sides by 7 in the middle, and breadth about 16 inches. It is carved out of a solid block of *hifo*, and has underneath, between two of the legs, a piece left with a hole in it, to hang it up by. The one, figured, is considerably more massive than two others which I saw, but one of these was evidently of no great age.

XV. RELIGION.

Long before the advent of the missionaries to Rotuma, the religion of its people seems to have degenerated into the grossest superstition and a mere belief in *atua*, a generic name for all devils, spirits, and ghosts. It is also used for the soul, as we understand it. These *atua* were ever ready to punish and prey on any one who did not propitiate them with plentiful gifts of food and *kava*. Each *hoag* had its own *atua*, but several *hoag* might acknowledge a big *atua* over all, while they each had their own *atua*. At the same time, so long as they propitiated their own *atua*, no great harm could happen to them, unless a greater *atua* laid a curse on them, causing sickness, etc.; the *atua*, though, could only affect them personally, and had little or no power over their crops. This *atua* might be termed "*the god of the hoag*," but there was also an inferior class of *atua*, who might be called "*devil spirits*," whose sole delight it was to go about causing sickness and death. To them only an evil influence is ascribed, and they were said to have been called up by Olili, who lived near Maftau, to assist him to conquer the Ninafoou people, and then to have got too powerful, so that they could not themselves be driven away (p. 402). Their dwelling-places were in trees, stones, and rocks; certain *hifo* trees in Itoteu and Itomotu were favourite dwelling-places for them, but some were said to enter into men, such as a man with a big belly, a *matasiri*, or with a crooked finger or cross-eyes. The still inferior class of *atua*, but a class with little or no power of itself alone, would best be termed "*the ghosts of men*." They could be to some extent called up at will by the relations to assist them against their enemies and to cure them of sicknesses of a certain class, supposed to be due to the influence of soul on soul.

Over and above all these one finds a great deity, *Tagaroa Siria*. The term *siri* was applied to anything bigger than anything else, but for *siria* I had the meaning "acting wickedly" given to me by Father Chevreul. Among his

attributes are the giving of the fruits of the earth and the forecasting and directing of the lives of men. He was prayed to for food, to make the trees fruitful, for rain, or in any great enterprise in which all were taking a part. He could avert a hurricane or any other great calamity, but all his attributes are great; he does not concern himself with the doings of the *atua*. "At one time *Lagi* and *Otfiti*, heaven and earth, were joined together and touched one another. But a man of *Lagi*, *Lagatea*, lay down with a woman of *Otfiti*, *Papatea*, and as they were lying a child was born, who, rising on his knee, pushed the heaven and the earth apart, and only on the prayers of his parents, who did not want to lose sight of one another, desisted from rising to his full height." This child is called *Tagaroa* or *Tagaloa*.

Tagaloa had a son, *Toiragoni*, personified by a turtle, to whom, wherever he goes, all leaves come. To him in the sea the same attributes are ascribed as his father has on the land, but I could not find that he had any acts of worship.

Tagaloa was the god of the *sou* and the *mua*; to him and in his honour were probably all their feasts and dances. He was never called upon by name, but he was to them the indefinable something which directs and guards everything; he was never addressed directly, but usually by the term *sonoiitu*, which seems to have been applied generally to all gods. The *mua's* feast and dance on the top of Muasolo was a prayer to him for fruitfulness to the crops and trees; it was sung only by the old people, a singular mark of great reverence. His dwelling was above, and he was accordingly supposed to see everything. He was prayed to for a plentiful harvest by the old people at midday in the full sunshine. If a boy was born, all would rush out of the house and, with firing of guns, call out, "*Sū-hō-hŏ!*" *Tagaloa* was supposed to hear, and accordingly direct the life of that boy, whether he was to become a warrior, a sailor, etc. He could thus be approached directly without the aid of priests.

The "*hoag gods*" were usually incarnated in the form of some animal, as the *tanifa* (the hammer-headed shark), *juli* (sandpiper), *olusi* (lizard), *mafrop* (gecko), etc. Should a man by any chance have happened to kill one of the particular animal which was his *atua*, he would have had to make a big feast, cut all his hair off and bury it, just in the same way as a man would be buried. Other animals, other than their own particular one, could be killed as they liked, as only their own *atua* in this class had power over them. To take the *tanifa*, the god of Maftau: for him there was a priest, termed an *apioiitu*, who officiated on all great occasions, and a priestess, called by the same name, whose business it was to cure sicknesses, and,

indeed, to see to all minor troubles. For the *apioiitu* was a house of some sort, round which the people were forbidden to sing and dance. Should Maftau be in trouble or be going to war, a big feast would be held, and the best of everything would be placed in the sea for the *tanifa:* a root of *kava*, a pig, taro, yams, etc., and always a cocoanut leaf. Much, too, would be given to the *apioiitu*, but always uncooked. Presently sounds would be heard from the house in which the *apioiitu* was, and he would come out, smeared with paint, foaming at the mouth, quivering all over, and falling into the most horrible convulsions. He would perhaps seize a *kava tanoa* and drain its contents, tear a pig in pieces and eat it raw, or take great mouthfuls of uncooked yam, the taste of which is exceedingly fiery. Presently he would fall down in convulsions and speak; he did not speak for himself, but the *tanifa*, who was in him, spoke, nor did he remember at all afterwards what he said. For the time he was all-powerful, and, what he told the people, they had to do; but, when he recovered, he was simply one of themselves again. The priestess was, on the other hand, really more a doctress, called in by the present of a pig and a mat. She would get into a frenzy, and so drive the devil which was troubling the person away. At the same time she never failed to give them herbs and other remedies. These offices were held by families, and their mysteries, such as they were, passed on from parent to child. The god of Matusa was the *hoie*, a stinging ray, which is common on the reef flat. There is an old man there now, who comes of the family of its *apioiitu*, and claims that these fish used to come round him on the reef and follow him about. Curiously enough, there are several old people who profess, and evidently believe, that they have seen them following him.

The "*devil spirits*" are productive of evil. Thus, if people go and ease themselves near certain *hifo* trees, they will be caught by an *atua*, called *Fotogfuru*, and either die or meet with some accident. In front of Vailoga, Noatau, if you see the devil spirit there, a reef eel, called *ia*, you will be sure to die. Here, opposite two rocks outside the reef, no lights may be shown at night, and all doors towards the sea in the houses must be shut. No one, passing along, may have a lighted torch, or he will be sure to hear the drums sounding and die. On some nights, too, there is a fishy smell, when the *atua* have been cutting up some dead man to eat. *Anhufhuf*, the cave of many bats,[1] is their especial abode, but off Solkopi they have a land, called *Falianogo*, under the sea, from which cocoanuts with only two eyes are occasionally washed up on the beach. It is taboo to touch or eat these, and any one doing so would swell

[1] *Vide* "Quart. Jour. Geo. Soc.," liv, 1898, pp. 7–9.

up and die. A particular shark here is a devil, and has the same power as the *ia*.

When a man died, he was supposed to go to *Limari*, leaving the island at Liuokoasta. This was supposed to be a land under the sea off Losa, full of cocoanuts, pigs, and all that man could wish for, and where all the ghosts of men dwell. Any things buried with the body would be taken by its ghost to *Limari*. On the grave food and *kava* were placed for a time, until the ghost should depart. Some ghosts were supposed to go to Houa, a small islet on the reef off Oinafa; they were, however, only supposed to stay there for a time, subsequently passing straight into the sea.

Should a man be sick, the most powerful way of curing him was for the parents of a child, which had recently died, to go to its grave and call out for its soul to come out, saying that the *kava* is all finished. After a time their cries will be heard, and they will pray the child's ghost to go and prevent any other soul from interfering with the sick man's soul, this being in former times thoroughly believed to be the cause of all bad sicknesses and death. A man could likewise call on his dead people, if he quarrelled with any one, to take that one away. So ingrained are they with this idea that Albert, one of the most intelligent men on the island, gave me this as the cause of its great decrease in population: "You see, the people were always quarrelling with one another about their land and food. They had only to wish that their father and mother would come and take their opponents away, and they would be sure soon to die. They" (the ghosts) "watched over the chiefs especially. If any one took their food, they would cause their bellies to swell up, and they would die. It" (the decrease) "is stopped now, as the *sou* and *atua* were all driven away in the war at Matusa" (p. 475).

In 1894 a big wave came and washed out a number of bones from a new graveyard at Matusa, close to the beach. A great meeting was then held in the district of both Wesleyans and Roman Catholics, and a deputation was sent by it to request the white magistrate to let them remove the graveyard. On his inquiring the reason, they stated that it was because the *atua* of the sea were always angry, when anything red was put up near the sea, and that some one had put up red palings, so that the *atua* had sent these waves to wash them away.

I have one charm from the island (Plate XXV, Fig. 6); it is merely the end of a whale's tooth, burned in the fire, with a hole bored through it, and was worn round the neck. Of auguries I cannot find that any were ever taken, but omens were carefully observed and regarded. They always consisted of something

connected with the person's *atua*. Dreams were much believed in, and charms were especially worn against their evil consequences.

XVI. WARFARE.

In the island of Rotuma there was always, as has before been indicated, a great rivalry between Noatau and Faguta under their respective chiefs, Marafu and Riemkou. With Noatau usually went Oinafa and Malaha, while Faguta had Itoteu and Itomotu. This gave a considerable superiority in numbers to Faguta, but it was usually equalised by a division in Itoteu, the north side of which was always at variance with the south, both sides claiming the right to the chieftainship. Probably the original cause was due to the conquest of the island by the Niuafoou people, who seem to have settled and intermarried mainly in the northern districts. There was never any difficulty in finding a reason, if a fight was desired, as any pretext could be seized on. The chief of one district might fail to pay the proper marks of respect to the *sou*, if he belonged to the other district, or, if tributary, might omit to send his tribute. If no cause came to hand readily, the chief of one district would steal a woman out of the other district, and then, without waiting for the other district to demand her return, would declare war himself. No violence was offered to the woman, nor indeed to any women during the war; the women simply followed their several districts, and ministered to their wounded.

There were no great advantages to be gained from the war by the winning side. The villages of the vanquished might be sacked, but they were seldom burnt; their plantations might be overrun, but there was little wilful destruction. All pigs were, of course, regarded as legitimate spoil. The vanquished would perhaps promise to pay to the conquerors so many baskets of provisions or so many mats and canoes, a promise which was always faithfully and speedily performed, even though they might accompany the last part of the payment with a fresh declaration of war. The victorious side obtained no territorial aggrandisement, as it was to the common interest of all to maintain the integrity of the land, and the victors might on some future occasion be themselves in the position of the vanquished. Nominally first-fruits were claimed by the victors from the chief of the vanquished, or perhaps the victors might depose the conquered chiefs, and put nominees of their own in their places. Small unruly chiefs of their own districts were often got rid of in this way. Such a course had, however, relatively little permanence, as the chiefs formed a kind of caste

of their own, entrance into which followed birth very jealously. There was no such thing as indiscriminate slaughter or debauchery of the women after a fight. A *faksoro* (p. 403) of a root of *kava* and a pig from the conquered was always respected for one night. Both sides remained where they were, as if an armistice had been concluded between them. Unless a fresh *faksoro*, with food sufficient for all, was presented on the following morning, hostilities would be resumed, but usually peace was arranged before this.

There was always a distinct declaration of war of some sort. It was not uncommon for the chief of the one side to send to the chief of the other a definite challenge for a particular day and place. If a canoe of one district passed in front of the chief's house in another district without lowering its sail, a *faksoro* for the insult would be demanded, and if not forthcoming, war would be declared at once. If war was not declared, it was tantamount to the submission of the insulted chief.

Warfare in Rotuma was the exact opposite to what it was in Fiji. The women were never molested; ambushes and surprises were unheard of. The two sides met usually on the more or less flat land by the beach, and a regular battle between them ensued. Previously the *atua* of both sides were propitiated by the different *hoag* separately. There were no common district rights. Tagaloa Siria was not invoked, according to Marafu, as such small matters did not concern him, and, as he was the god of both sides, it was quite unnecessary. On the night before the battle, great feasts and dances were held by both sides, and the latter were usually repeated by the two sides, when opposite one another in the field, before the battle commenced. All were clothed in a *kukaluga* or the *taktakoi*, and decorated with flowers; on the head was the war hat, a wooden or bamboo framework covered with tappa and ornamented with the long tail feathers of the boatswain bird. Round the neck of each, there was sure to be a charm, while the bodies of all were smeared with turmeric and the soot of the *hifo* nut. There usually were two or three lines of veterans, differently armed, while behind these followed the young men and boys, with stones or any weapons they might happen to have. In late wars the chief weapon was of course the gun, with which the first line was armed. A second line, armed with long, pointed sticks, termed *uok*, took the offensive when they came to close quarters; they again were speedily followed by the clubmen. In the old days the battle commenced usually with a shower of stones, and then a rush would be made by the first line, armed with the *uok*, the second line, armed with clubs,

following on their heels. The chief, with his *hoag*, was usually in the centre, and here there were three lines: the *uok* men and then a few men armed with a shark's-tooth weapon, the *oikoaga*, and lastly the clubmen, among whom was the chief. The young men and boys during the whole time kept up an incessant fire of stones over the heads of these lines, and acted on the flanks. Stones held in the hands were likewise weapons used in close quarters; they were termed *hofso*. The best of these were made out of one of the bivalve shells of the giant *Tridacna*, ground down to a more or less oval shape. A groove, too, in them was commonly worked for the thumb, so that a firmer grip might be obtained. Others were of lava or basalt, and were used indifferently for striking or throwing. The *oikoaga* was described to me as a weapon, about 6 feet long, with a long round handle, 1 inch thick, knobbed at the end. The other end was broadened out to about 5 inches, and set between slips of bamboo, tied on, were the re-curved teeth of a shark, probably one of the Carchariidæ. The top of the handle was described to me as paddle-shaped. It was always a very rare weapon, and much prized. I have the end of one 27 inches long. The central stick has evidently been smoothed down with great care with a shark's-skin file, and holes have been bored completely through it for the sinnet, with which the teeth are tied on. Two or three holes are bored through the several teeth for the sinnet, which is exceptionally neatly made. The bamboo slips are underneath the sinnet; their object is evidently to keep the teeth in their place on the edge of the main stick. The idea of the weapon was to seize an enemy with it and draw him out of his line, while one of the warriors of the third line clubbed him to death. Another shark's-tooth weapon was the knife, *oi fo pilte*; I am not certain, though, whether it was really a Rotuman weapon or not. The one in my possession is about 28 inches long, and seems typical of the Tokalau, or Gilbert islands. The handle is in section nearly square and about 6 inches long; the teeth are not recurved, and are set in two grooves, cut in the edge of the sticks. The teeth are firmly bound on with sinnet through one hole in each tooth, while the holes through the stick are set well back. The groove for the teeth stops short about 1 inch from the end, which is somewhat pointed.

The club, or *oipeluga*, is of the general type shown in Mr. Edge Partington's illustrations; its length is from $3\frac{1}{2}$–4 feet. The transversely carved lines of the end are very characteristic. The transverse section here is that of a much-flattened rhombus, and these lines rise from the sides to the centre at regular intervals, and join with those of the opposite side on the same face

of the club. They are cut regularly from the bottom for 2–3 inches perhaps, and then one on one of the sides of the rhombus is left uncut; it will be cut in the other three sides of the rhombus. On the other side of the rhombus, on the same side of the club, it will be the next of these grooves that will be left uncut. On the other side of the club two neighbouring grooves to the above will be left. Then perhaps all will be cut for another interval of 2–3 inches, and four will be left uncut precisely as before. At the top of this part, they are not always the two next one another that are left uncut. This cutting I believe to be quite typical of Rotuma; the three in my own collection are all carved in this way, and so likewise are one in the British Museum and one, which I saw in Fiji. Two in my possession have carved handles; all the carving is in straight lines, but on one are some figures of sharks and lizards. One club in my possession was used by the great-grandfather or granduncle of Marafu in the war against Riemkou about 1800 (p. 473). The balance of all is excellent and well adapted to their use as two-handed swords. Used as an axe, like a Fijian club, they would not be nearly such efficient weapons. The spear, or *jou* (p. 463), was not used for anything save processions, but the *uok*, a pointed stake about 8–9 feet long, took its place; it was described to me as generally perfectly round, pointed at both ends, and used for both thrusting and striking.

The earliest war remembered is spoken of as the "great Malaha war." There were two brothers, Kunou and Maragsou, who lived with their sister Suogmasto in Malaha. In their turn on the occasion of a feast, the three prepare food, and carry it to the *sou*, who was at that time dwelling in Savelei. The brothers placed their food on the ground outside the *sou's* house, or *sou ura*, but the girl, being of a chief family, entered to place her food in the *kokona* (p. 422). She was then made to place it on the ground, and told to stop with the *sou*. The *sou* in fact wanted to make Suogmasto his *fanhoga*, as he had a perfect right to do. The right, however, was not generally insisted upon, and here the great insult came in in the fact that he had not sent his old *fanhoga* away first, nor sent his *tonhida*, or messenger, and other officers to summon Suogmasto and escort her to him. After the feast the brothers found out about the insult, and accordingly took Tua, the chief of Malaha, and made him the *sou*, establishing him in Matusa. But soon they took him away from there and brought him back to Malaha, leaving his cousin, a Malaha man, called Froumontou, to look after everything in Matusa. Riemkou, on Tua's return to Malaha, at once proceeded up the island to Matusa, and conferred the

office of *sou* on Froumontou, who had managed to much ingratiate himself with the people of Itoteu and Itomotu. He then took him along the south side of the island, and established him in Faguta. In consequence of Riemkou's action, Marafu stepped in, and as a result the sides in the war were Noatau, Oinafa, and Malaha *v.* Faguta, Itoteu, and Itomotu, or Marafu *v.* Riemkou. The fighting is said to have taken place all along the line, to have been continuous for several days, and the slaughter to have been enormous; nearly all the young men on both sides are said to have been killed, and many whole villages to have been completely depopulated. The brunt of the fighting really fell on Noatau and Faguta, but in Malaha alone over one hundred are said to have fallen. The date is given by Froumontou, who was the paternal great-grandfather of Albert. Albert is about sixty-six years old, and, if to this thirty years is added for the two generations between him and Froumontou, the date would be placed at the beginning of this century.

There was another war, in 1858, between Malaha and Itoteu; the indirect cause was Christianity, which Malaha had embraced, while Itoteu still remained firm to its old religion. In it Malaha was worsted, and lost about fifty killed. A ship present at the time assured the victory to Itoteu by lending them guns and other weapons and sending her crew to assist in the fray: they afterwards, too, took away a considerable number of men from Malaha as labourers.

After the "great Malaha war" was a long period of quiescence, due to the exhaustion of both sides and the changes, which naturally followed the coming of the white man. The enmity between Marafu and Riemkou still however continued, and was only waiting for an opportunity to give rise to open hostilities. At last about 1837 Marafu obtained a small cannon off one of the whalers, and an opportunity was soon found. The immediate cause seems to have been that the chief of Teukoi, in Itoteu, passed by the *sou* in Faguta in his canoe without lowering its sail. At the time he was on his way up to see Marafu, to beg a pig from him to take to a woman in Faguta, as a *fuksoro* for some offence or other. Riemkou, as, when the *sou* was in his district, he was his protector, was furious at the insult, and arranged to intercept the canoe on its return to Teukoi, but this failed, as the canoe was taken home along the north side and round the west end of the island. Messages passed in consequence between Riemkou and Marafu, but the latter settled the matter by going up to Teukoi along the south side and passing the *sou* with his sail set, and without loosing his hair. Riemkou then sent to Marafu to challenge him to return along the south side of the island, and

received a reply from Marafu that that was what he intended to do. Meantime the Noatau people came through the bush to Teukoi, dragging the cannon with them. This cannon is said to have been the first firearm used by the natives in war. That night a big dance was held in Teukoi, and on the following morning Marafu moved up along the south side and met Riemkou in Faguta. At first the cannon struck terror into the people of Faguta, but they soon rallied, as after the first few shots it got clogged, and a fierce battle ensued. More than one hundred of the Noatau men were killed, and among these Marafu, but the war was quickly concluded, as Riemkou allowed the Noatau people to carry the body of Marafu away and bury it on the hill of Seselo, as he had formerly been *sou*; the cannon also was taken away and placed as a gravestone over Marafu. A great number of pigs and an immense quantity of vegetables and mats were paid as indemnity and for ransom. The loss on Riemkou's side is said to have been but slight.

The office of *sou* was abolished after a war known as the "Matusa war" in 1869 or 1870. While the rest of the island was for the most part Roman Catholic or Wesleyan, the south side of Itoteu and to some extent the north side also still clung to the old religion; the people of Matusa and Losa, and indeed of the whole of the west end of Itoteu, were Christian. Taurantoka was chief of Itoteu, and had a *sou* in Savelei; Morseu was the minor chief of Losa and Halafa, while Mafroa was acting for his father along the north side of Itoteu; none of these were Christians. It really commenced by Morseu keeping on contiunally taking pigs from Losa and Halafa, till these places got exasperated and refused to give him any more, threatening to shoot any one, they might find taking them. Their leader in this was Fakamanoa, a big name in Itoteu, and the father of its present chief. Induced however by a native Fijian missionary, they took as a *faksoro* to Morseu a pig and a root of *kava*. He accepted it, but on the next day seized a pig, and on the day after, trying to seize another, he was resisted, and a deputation sent to Taurantoka with a root of *kava*; Taurantoka, in reply, promised to take Losa and Halafa under his own charge. Meantime Mafroa and his father had been baptised into the Wesleyan body, and refused *ipso facto* to have anything to do with the *sou*. Taurantoka at once declared war; the white missionary stepped in and tried to stop it, but a fight was inevitable. It was then the south side of Itoteu, under Taurantoka and Morseu, against the rest of Itoteu, under Fakamanoa, Mafroa, and Albert. The latter was a man of considerable influence, owing to his connection with the missions, of a chief family, and living in Matusa. The battle

took place almost in Matusa, on the road along the south side of the island, at dawn, lasting till midday. Nearly all the fighting was on the relatively open beach flat; it consisted of desultory firing from behind cocoanut trees. About sixty of Taurantoka's people were killed before he took to flight. As a result the office of *sou* was abolished, Taurantoka and Morseu baptised, and Albert, who had shown throughout very conspicuous bravery, made chief of Itoteu.

The last great war was in 1878, and was practically Wesleyans *v.* Roman Catholics. Really it was largely brought about by white men, working on the old enmity between Marafu and Riemkou. It arose through the intrigues of Albert, who wished at the council meetings of the chiefs to get his name called for *kava* before that of Tavo, the chief of Oinafa. Riemkou was supporting him, as he was jealous of Marafu, who was both chief of his district and *fakpure*, or head chief, of the island. Albert then in a meeting at Oinafa brought up his own matter and that of Marafu's two offices; Marafu replied through his brother Hauseu, who was his spokesman, or *hoasog*, that, as far as the chieftainship of his district was concerned, it was no business of theirs, and that, as he was entitled to receive the *kava* first, it was his business to see that it was called to all in their proper order. Riemkou did not attend the next meeting of the council, and, as he refused to pay a fine, it was considered equivalent to a declaration of war. A white missionary then, called Moore, seems to have gone to Albert, and also into Malaha and Oinafa, practically preaching a war against the Roman Catholics. As a result, Riemkou brought a *faksoro* to Marafu, who accepted it: and to settle the matter Riemkou let himself be baptised a Wesleyan. The Wesleyans, who had begun to gather, were dispersed, and Riemkou at once turned Roman Catholic again. Marafu, who at that time was called Hauseu, informed me that then there was no question of war, and that the affair was considered settled until this missionary came and practically began to preach a war of extermination against the Roman Catholics. Accordingly the Roman Catholics gathered in Faguta from the whole island, and prepared for resistance, digging out the interiors of their houses for rifle pits. The result was never for a moment doubtful. On the first day twenty-two men were killed, and the Roman Catholics driven on to a small isthmus, where they were blockaded for two months. At last Riemkou was killed, and all submitted. Throughout the whole war Marafu protected the Roman Catholic missionaries, their church and property, and steadily refused to allow any land to be taken from the conquered.

XVII. CANNIBALISM.

It was not the custom to cook and eat the slain after a battle; indeed, it was held in the greatest abhorrence. There has been, however, an account of one such act transmitted down. It is said to have occurred in a period of very great famine after two successive hurricanes, when nearly all the pigs and food had been consumed.

Koufossi, the son of Riemkou, chief of Faguta, was the *sou*, while his wife was a girl called Hapta, who belonged to, and had three brothers living in Itomotu. By her he had a son, called Timora. During the famine the three brothers came down to see Hapta, and offered to take Timora to Itomotu, as there was more food there, and the famine was especially bad in Pepji.[1] Koufossi at once allowed them to take the boy, and told them to feed him with anything fresh they could procure, meaning human flesh. They then started for Itomotu, and, as they were passing Tarasua Point, they saw a bunch of bananas, which they proceeded to cut down to make food for the boy. After they had made a fire and oven to cook the bananas, the owner's wife came up and asked them who had given them leave to take the bunch. They then tried to put her off, but without avail; so one made a sign to the others to keep her attention occupied, while he came up behind and killed her with one blow on the head with a stick. They then roasted her, and, after feeding the child, finished the rest of her between them. Later on they killed the woman's husband, Taipuni, and his brother, eating them likewise. Finally the three brothers were stoned to death on the reef flat in front of Itomotu, and then eaten by the man and woman's relations, their bones being all placed in one hole.

Timora lived to manhood, but was unfortunate in everything that he undertook and never able to get a wife. He was finally killed, when quite an old man, by having his head crushed by a stone in battle.

XVIII. MARRIAGE.

Until a girl was married, she was practically free to orm what connections she desired, but she was not allowed to sleep in any other house than her parents'. It was considered no disgrace if she bore children, and it would not operate in any way to prevent her getting married. Indeed, a child acted

[1] There is no *papoi* land in Pepji, while there is a large swamp in Itomotu (see p. 420).

in the other way if she wanted to marry into another *hoag*, as it proved her fertility. As soon as she reached a suitable age, usually about 15 years, she was given a screen in her parents' house to herself. Here she might be visited nightly by the men, and all the courtship took place; a door for their entrance was usually left unfastened. Fornication is said to have been exceptional. The parents were supposed to be ignorant of any visits to her. No violence was ever offered; to escape she simply left the screen and entered that of her parents. Men were valuable to the *hoag*, and her duty was to attract a man, who would enter her *hoag*. The marriage was arranged by the parents, all overtures coming in most cases from those of the girl. Having fixed on a suitable man, they then visited his parents, taking with them a cooked pig and some taro as a present. In the case of big chiefs or owners of the family name, or if the man belonged to a very rich *hoag*, matters were usually arranged the other way, so that the girl would enter the man's *hoag*; his parents then made the overtures. In all cases the consent of the *pure* of the several *hoag* had to be obtained; marriage in the *hoag* was forbidden, and also that between first cousins. A grandchild of a man and wife might marry his or her *hoisasiya*, second cousin, if he or she was descended from the *seghoni*, the man's sister, or the *segvevene*, the woman's brother, but not, it was distinctly stated, if the descent was from the man's brother or the woman's sister, both of which relationships are expressed by the term *sosoghi*. The same terms I understand to have been used of first cousins to one another, in accordance with the relationships of their parents. The term *oifa* applies to the father or uncle, and *oihoni* to the mother or aunt.

The affair being settled, the relations and friends of each party meet, and make arrangements as to the date and what each shall bring to the feast. Every one who is in the least degree a relation or a friend is invited, and a portion allotted to them. Thus, at a small wedding hundreds will be present, while at a large one there may be more than half the island, and as every one has to bring something, the quantity of food, etc., is often very great. All is ready cooked, and consists of pigs, taro, yams, *dahrolo*, and roots of *kava*, while the women bring mats.

At a wedding between two Noatau people, and this by no means a large one, in front of the bride's parents' house was erected an awning of cocoanut leaves, while similar ones were placed some yards away at right angles to the right and left. In the right-hand one sat Marafu, the chief of the district, while under the opposite awning to him were the near male relations of the pair. In the centre of the awning between was

a pile of mats, and round these were sitting the women and girls, to the number of about 250. In their midst sat the *mapiug*, the woman who weaned the bride, and also her *sighoa*, or namesake. The former directed every ceremony of the feast, while the latter had under her charge all the arrangements and divided out the food after the feast. The bride and bridegroom presently arrived from the religious ceremony, and seated themselves on the pile of mats. At once a procession from the man's *hoag*, which had been sitting down a short distance away, came forward; they brought an immense pig, carried between two poles by eight men, a bullock with four carriers, three pigs with the same, three pigs with two carriers, an immense root of *kava* with four carriers, and, lastly, came about twenty men and boys each with a couple of baskets of food or roots of *kava* on a stick on one shoulder. These were placed down in a heap on the right, and the bearers at once retired to join the men, who were sitting under the trees at some distance. A small heap had been previously placed in the centre; this, and this alone, was cut up and distributed in the feast, which at once followed. The *mapiug* now ordered the feast to be served; the *kava* was chewed, and, when it was ready, the first bowl was handed to her. She did not drink it at once, but suddenly rising, snipped a pair of scissors two or three times over the left temple of the girl. This is the sole survival of the *ufuga supu*, or "the clipping of the *supu*." Among the women one lock of hair, the *supu*, was always kept separate and never cut; it fell from the left side of the head over the left breast. It was only cut, when the girl was married, or if she had a child. Now, no lock of hair is thus kept, and there is only the pretence of what was probably once the important part of the ceremony.[1] *Kava* was then brought to the bride and bridegroom, and the feast commenced, the bride and bridegroom eating off the same banana leaf. The feast at a marriage differs from all others: the men almost entirely serve it to the women, and man and wife eat off the same leaf. After the feast, more processions of food arrived, and were placed either with the man's pile, on the right, or the woman's, on the left. There were in all two bullocks, thirty-seven pigs, about one hundred and fifty baskets of taro, fifty baskets of yams, and fifty roots of *kava*. The *sighoa* now proceeded to direct the division of this, so that each should return home with a share; the mats, too, were similarly divided, anything given by the woman's side being handed over to the man's side, and *vice versâ*.

During the next six days the pair are fed about once every

[1] It was suggested to me by the late Mr. George Peat, of Rotuma, that this lock was a kind of guarantee of virginity.

hour, and continually watched. For the first three days, they remain in the woman's house, but on the fourth are decked out in big mats and flowers and brought in procession to the man's house. After the sixth day they go to whichever *hoag* they are going to live in; a usual arrangement at the present day is for them to live half the year in each. In the old days there was no procession to the man's house, if he was to live with the girl's *hoag*. Of course such a method now often leads to the separation of the pair, the wife going back to her old home. The husband then cooks some taro and a pig, which he takes to her, after which she is bound to let him remain with her, or go with him, for one night. Adultery of the man or woman was punishable by club law, but apparently only on the man in fault. Herbs to procure abortion are not unknown, but the more usual method used to be for the woman to go into the water and deliver herself there.

Most parents take great pride in and care of their children. In cases of illness, they would do more for another man's child than for their own parents, if old. When a child is born, the mother is at once washed and smeared over the breasts and abdomen with turmeric; the plaited top of an old *taktakoi*, or man's dress, was generally used as a bandage around the abdomen, which was bound up very tight. The child is washed as soon as it is born in cold water and smeared with turmeric, especially over the head, to make the bones join properly; the head is indeed constantly smeared for the first year. There is no difficulty about parturition, and miscarriages are almost unknown. I have seen the mother bathe in the sea in the evening, when she had been only that morning confined. The operation was formerly performed by priestesses, but now by any old woman, very likely the woman's mother. The next few days the mother remains at home and is visited by all her relations and friends, each of whom has to bring a present, the only occasion when one is given and not returned. More than one child at a birth is rare. A few years ago a woman had triplets; such a thing was quite unheard of before. In reference to this case, Albert believed that there must have been three different fathers, one for each child. The *sighoa's* (or namesake's) house is to the child as the mother's house; often it used to lead to adoption. On the fifth day a feast is held for those present at the birth. The mother suckles the child for a year (two Rotuman years), during which her husband used to leave her at night. Then a great feast is held, most of the food and mats being given to the *sighoa*. The *mapivg* now takes the child to her own house for one Rotuman year, and weans it. At six years old *sere*, or circumcision, was

performed by one of the priests in the bush, the prepuce being simply split by a limpet shell, its full removal generally being performed later. The tattooing of the boy followed at the age of thirteen, and, when it was completed, he became a man; if a chief, however, as soon as it was commenced, he was systematically taken in hand by the women and taught fornication. As different parts of the tattooing were completed, there were feasts, accompanied by various religious ceremonies, in the course of which all the *atua* (pp. 466–8) who had anything to do with the boy's *hoag* were called upon; they were in no way accompanied by scenes of unnatural vice.

The remarks on Polynesia of Professor Letourneau[1] will not apply in any way to this island. The women do no field work, and could not be regarded in any way as among the chattels of a man. The language is not chaste according to our ideas, and there is a great deal of freedom in speaking of immoral vices. In this connection a man and his wife will speak freely to one another before their friends, and perhaps indulge in a little chaff. I am informed, though, by European traders well conversant with the language, that there are grades of language, and that certain coarse phrases would never be used to any decent woman, so that probably, in their way, they have much modesty, only we cannot appreciate it. Their dances in the old days would have been, I believe, scarcely immoral or indecent in our sense. Of a Tongan dance, recently introduced, Marafu told me that he had never seen a Rotuman one as bad. According to the old men, married people used to be exceedingly faithful to and jealous of one another; I have constantly been told, in referring to divorces, that "it was not so in the old days." I was given to understand that divorce could only be brought about then by the one, who desired the separation, buying off the other with great presents of food and mats.

XIX. TENURE OF LAND.

Even in such a small island there was at all times a marked line of distinction between the coast and hill people. The latter lived in certain towns and villages along the inner slopes of the hills, and cultivated exclusively in the great central valley. As a rule, they possessed no land or rights outside of this valley, nor had they any claim on the shore waters, *i.e.*, the broad boat channel, 4–5 feet deep at low tide, between the reef and the shore. They were to some extent under the rule of the coast people, and were only allowed to come down to the coast at certain times. The outer reef,

[1] "The Evolution of Marriage," 1891.

however, was considered as common property by both peoples, but the right to cross the waters of the boat channel had to be paid for, generally in a basket of taro or yams every year, *i.e.*, six months. Between the two peoples as such no wars were waged, nor do the hill people seem to have taken much part in the different wars between the coast districts. The centre of the eastern division of the island was strictly divided up between the different districts, but its people really formed a division to themselves, many having planting rights over lands in several of the districts. Most of their descendants had really either little or no land in their possession properly, or have made exchanges so as to get it all close together. This has in the last thirty years been greatly facilitated by the priest (or *faha*) of the Roman Catholic Mission at Pepji, who systematically set to work to get all the different isolated pieces, left to his church, into one block. Two several families, however, from Hoite, a big town formerly situated almost at the junction of Noatau, Oinafa, and Pepji, have still planting rights in all these three districts. There was a little west of this, below Sol Satarua, another large town, Rahiga, and in one village on Sol Hof in 1861 there was a church. At the other end of the island, on Sol Mea, was Lugula, with about forty grown men in 1845, while at the same time Halafa, near it, had about the same number. The latter is now in the possession of one family, with nearly all its lands, with the chief name Titopu, which properly carries the chieftainship of all this part of Itoteu. This *hoag* now consists of about nine persons, who live principally at Maftau, but have houses at Halafa. These hill people have only left traces of themselves in their ruined villages here and there, and in numerous legends of individuals. The former were very compact, with massive and well-built *fuagri*, or house foundations; their graves, too, were on very high foundations, or at the top of some hill, or neighbouring elevation. All giants, strong men, etc., are represented in legends as coming from the hills, and the hill people generally are stated to have been in stature bigger than the coast people. Graves, dug up on Sol Hof and near the old sites of Rahiga and Lugula, were only 1–3 feet deep. The bones were too much broken and decayed to be brought home, but from their appearance might well have given rise to the latter statement. Above Rahiga they seem to have been buried in a sitting posture, but a diligent search gave no implements or weapons. I am inclined to believe that most of the inhabitants of this inland division to the east of the isthmus were really tenants of the coast people. There were undoubtedly a few *hoag* among them, but the number of family names among their

descendants is very small. Possibly they were the original inhabitants of the island, conquered by some subsequent migration and recruited from the overcrowded *hoag* of their conquerors. First-fruits were rigidly exacted by the chiefs of their districts, and the coast people seem to have had rights of planting on any of their land, not occupied, without any recognition of their ownership. They have always been looked upon as a dying-out people, and the number of their descendants is in no way proportional to their known population of fifty years ago.

No private property in land formerly existed; it was all vested in the *pure* for the time being of the *hoag*; the district generally had no rights over it. It usually consisted of four kinds: bush, swamp, coast, and proprietary water in the boat channel; common to the *hoag*, too, were wells and graveyards. Every member of the *hoag* knew its boundaries, which consisted of lines between certain trees or prominent rocks, posts, and even stone walls. In the bush land every *hoag* possessed property; it lay on the slopes of hills and in valleys between at some slight distance from the coast, from which it was separated by a stone wall, running round the whole island. On it taro, yams, bananas, plantains, and a few cocoanut trees were grown for food, while the paths into it and through it were planted with the Tahitian chestnut, the *fava* tree, and the sago palm. The Tahitian chestnut and *fava* trees were favourite boundary marks owing to their size and longevity. Swamp land is only possessed by Noatau, Oinafa, Matusa, and Itomotu. It is low-lying land, on extensive beach sand flats, which exist in these districts. The tide always keeps it wet, percolating through the sand, and in it is grown the *papoi*, or *broka*, against famine. The possession of a good-sized strip always caused and gave to the *hoag* a position of importance; its boundaries were stones at the sides. Coast land lay outside the surrounding wall, to which the *hoag* had a strip from and including the foreshore. On it as near as possible to the coast the house or houses of the *hoag* were placed, while the rest of the land was planted with cocoanuts for drinking purposes. *Hifo* trees are stated to have been planted formerly to show the boundaries, but they more often now consist of stones or cocoanut trees, the ownership of which is a constant source of dispute. Districts and even villages were sharply marked off by walls down to the beach. All had the right of turning out their pigs on this land, and each *hoag* had to keep in proper repair the parts of the wall adjacent to it. Each had, however, usually an enclosure on its own land for its own pigs, when young. The proprietary water ran from the foreshore to the

reef, a continuation of the strip on shore. At Noatau and Matusa, where it is very broad, it was to some extent cross-divided. It consists of a sand flat covered by 10–12 feet of water at high tide. On it fish of all sorts are caught by traps and various devices, and shell-fish are gathered. As these form no inconsiderable portion of the daily food, indeed the principal animal food, the value of this property was always very considerable. The reef—*i.e.*, the part on the outside exposed at the low tide—was the common property of all. It was explained to me that fish, crabs, etc., cannot be cultivated there owing to the heavy breaking seas, but are sent up by the *atua*, or spirits.

The manager of this land for the *hoag*, its *pure*, is usually the possessor of the family name or, if he is too young, its oldest living member. His duty is to divide out the bush land year by year to the different households of the *hoag* for planting purposes, and to settle all disputes between its members. Further he has to take care that a proper number of cocoanuts are planted to take the place of the old trees, and to see that the walls are kept in proper repair. The swamp land is cultivated by the whole *hoag*, but if one part of the boat channel is especially fed by one member, she gets an especial right there. On occasions, when the whole *hoag* is interested, such as the repairing of the great wall of the island, the planting of the *papoi* land, or house-building, the *pure* has the power to call all its members out. His principal duty now is to see to the getting of the copra for taxes, deciding what each household has to make. The first-fruits of each cultivated patch were brought to him: a basket of taro or yams, or a bunch of bananas. For all marriage or other feasts of any members of the *hoag*, he was the head, and generally nothing could be done without consulting him. Over the land the chief of the district had no rights, except to order necessary repairs to fences or the keeping up of paths. In Faguta, however, he claimed first-fruits from all. Any land, not being planted, is willingly lent to another *hoag* on condition of two baskets of first-fruits of each patch being brought to the *pure*, but cocoanut trees on the land cannot be touched by the tenant, nor is he entitled to their usufruct. If a *hoag* owns land in one district, but lives in another, first-fruits are always paid to the chief of the district, in which its lands lie.

Any encroachment on the land was very vigorously resented; it was usually referred to the district chief to settle, and his decision loyally adhered to. Adoption into the *hoag*, with the consent of all its members, was frequent, the man so adopted losing all rights in his former *hoag*. Marriage, too, was

another method of recruiting the *hoag*, the husband very generally, though by no means universally, coming to live with his wife, and the children belonging to the mother. As most of the *hoag* have far more land than they can cultivate, children without fathers were, and are to some extent, especially welcomed. When a wife dies in the *hoag*, the husband if he does not belong to it, as the corpse leaves through one door of the house, is pushed out of the other, signifying that he now has no right in it. By the above means the *hoag* rarely became extinct, though the family name has frequently been dropped.

In recent years, very generally, on the *hoag* becoming small its land has been divided out severally among its members, thus creating private property in it. Since the introduction of missionaries, too, much land has been seized by the chiefs, who, as a rule, in each district were its missionaries, as fines for the fornications of individuals. A certain amount of cocoanut oil was then given by the chiefs to the Wesleyan Mission, apparently in payment for their support. The mission in the name of which it was done, though generally without the knowledge of the white teachers, was so powerful that the *hoag* had no redress. The mission and chiefs obtained this power as the result of many wars waged against the adherents of the old religion; the confiscation of all the lands of the vanquished was proposed by the mission, but resisted by all the chiefs. Much land left to and bought by the Roman Catholic Mission is similarly situated; the individuals had no right to dispose of it without the consent of the whole *hoag*. The children of a marriage now, under British rule, have rights in the land of both the parents, so that they belong to the two *hoag*; in time the whole island should become absolutely communal. Property, too, in wells and the reef waters is now comparatively little recognised.

Private property to some extent existed in domestic animals and manufactured articles. When a man was dying, he usually gave them to some relation or friend, who may have been taking care of him. If a man's sons and sons-in-law were living and planting with him, on his deathbed he might apportion out the planted land to each, but the land was none the less under the *hoag* and subject to the payment of the first-fruits to its *pure*. If he had planted more cocoanuts than required by the *hoag*, he had the entire usufruct of these trees during his lifetime, quite independently of the apportionment of the land below them for planting. If in old age a man was neglected by his descendants or *hoag*, and taken care of by a stranger, he often gave him for his lifetime the usufruct of these trees and the crop of any plantations, he may have before

his death cultivated; it only extended to the single crop: subsequent planting was not allowed. Slaves as such did not properly exist; Polynesian or Micronesian strangers, *fa helav*, were usually married into different *hoag*, or adopted with the consent of all the members of the *hoag*. A few Fijians and Melanesians have become *fa asoa*, or helping men, of different chiefs; no women would have anything to do with them, and no *hoag* would adopt them. They remained on the island as long as they liked, and transferred their services as they liked; they were treated as inferior members of the *hoag*, to which they gave their services. A few women of low caste have in recent years married Fijians, but there is only one case of a Fijian woman being married by a Rotuman. No trouble was taken about burying these *fa asoa*; they were usually buried on some islet on the reef, but some Maoris, who were brought to the island in a whaler at the beginning of the century, were exposed on the top of the islet of Husia, off Noatau.

XX. SPORTS, GAMES, AND TOYS.

In times of peace meetings used to be held between the different districts for cock-fighting, wrestling, canoe-sailing, etc. For the former the chiefs used to breed a small cock, somewhat similar to the Malayan fowl; great care was taken in the feeding, and the spur was especially sharpened and oiled. Usually pigs were put up on both sides, and went to the conquerors.

In wrestling any fall to the ground counted. The chosen champions watched each other carefully from a distance, and then, perhaps, one would rush on the other and make a feint, only to turn aside when they seemed bound to come to close quarters. The great idea was to get one's opponent, from the nature of his or your rush, into an awkward position, so that he could be seized round one thigh, and could not avoid a fall.

Canoe-sailing was carried on, especially on the occasions of certain big feasts in connection with the *sou*. The canoes employed were the small ones, the *tavane*, with mat sails. In each canoe only one man sailed, and the different districts would contest for the prize with ten, twenty, or even more representatives. There were also commonly canoe-races for the women. The course was always inside the reef, and much fun was caused by the constant capsizing of the canoes.

The Fijian game *tiqa*, or *ulutoa*, used to be very popular; it is now only played by the boys. Properly it seems to be a Fijian game, and was doubtless introduced from there. It is

played by throwing from the forefinger, covered with a piece of cloth, a reed about 4 feet long, armed with a pointed piece of hard and heavy wood, 3–6 inches long. It is thrown along the ground, bouncing over it, the winner being he who can throw it furthest.

The shooting of a large rail, the *kale* (*Porphyrio smaragdinus*, Temm.) was taboo to all, except the chiefs. For it, it is stated that small bows and arrows were used. A captive *kale* was tied up in the middle of some open space in the woods, and round it the chiefs hid themselves in the trees. To some extent the captive bird was trained, but in any case it would attract other birds of its own species by its cries. The possession of a well-trained bird always gave a chief a position of consequence among his fellows. The bows and arrows were, as far as I could find out, mere toys, and had no other use.

Hatana and Hoflewa, uninhabited islands off the west end, are regularly visited for the eggs and young birds of the *nogo* and *layea*, two species of *Anous*. The adults were caught by means of large hand-nets, the birds being attracted by an imitation of their cry, a sort of cor-r-r-r, at which the natives are very proficient. The young birds become very tame, and readily return to their masters. Flying contests between different birds were not of unfrequent occurrence.

Of musical instruments the nose flute is now well known; it is of exactly of the same type as the nose flute of Fiji, and very possibly has been introduced from those islands. The few I saw were rough and made of very small joints of bamboo; I never came across any one in Rotuma who could get a tune from one. I saw also an instrument closely resembling Pan's pipes and a sort of Jew's-harp, made with a spring of bamboo. For none of them could I get any Rotuman name, so that I am compelled to regard all as foreign. The conch shell is much used in the bush for calling the people together, and also the chicken to their daily meal. The drum has already been referred to (pp. 458–9); it is used for summoning the village to church or to any meeting.

The children have a ball made square of cocoanut or pandanus leaves, and sometimes stuffed with grass. On windy days they may perhaps be seen with little windmills by the seashore. These are made of two crossed bits of cocoanut leaf on the end of the midrib of one of the leaflets. The kite also is not unknown. I saw one in Juju which was evidently of European design; another old one I saw in Losa was quite round and made out of an old mat, somewhat bellied, on a frame formed by the midrib of a cocoanut leaf. It had the remains of a tail, pieces of cocoanut leaf tied at equal intervals

on a string of sinnet. I could not ascertain how far these were of Rotuman origin.

On moonlight nights the beach is alive with the girls and boys, singing and playing all sorts of games. A favourite one of these is a sort of "prisoner's base"; a kind of base is marked off, and then one side hides, while the other side searches for them; they have, if possible, to get back within this base. In another two sides are formed, and join opposite one another hand in hand; they then, singing, advance and retreat from one another or dance sideways up and down in front of one another. Then, when the one side has managed to get the other all moving in the opposite direction, it suddenly turns, while the other side pursues it down the beach and tries to surround it. Another game ends up in a tug-of-war, each clasping the one in front round the waist, while the two strongest of the opposite sides have hold of each other's wrists. In another two rings are formed, the one inside the other; they face towards one another, and dance towards and away from one another or round in different directions in accordance with a song, which both will be singing. It ends up, too, in a general chase of the one line after the other down the beach, and perhaps even into the sea.

Another favourite amusement on the beach is to make a bank of sand, and out of this to scrape a number of holes in the sand. A piece of coral is then taken in the hand and, while these are filled up, hid in one. When they are tired with the rougher games above, the whole beach may be seen strewn with young people, five or six together, playing this game. The unsuccessful in guessing, in which hole the coral has been placed, will be set on by the others, and covered in sand. The most recently introduced game is known by the name of bluff; it is really a kind of "poker," and is now much played for boxes of matches. Women are not allowed to play, but look on and sell cocoanuts, oranges, etc., to the players for boxes of matches.

XXI. SINGING AND DANCING.

The island is curiously deficient in native songs and dances; the people themselves speak of their songs and dances as *furou*, or foreign, except the class which are known under the name of *tau toga*, the origin of which is quite unknown. The term *mak* is applied to the combined song and dance. The meaning of the term *tau toga* is obscure; *tau* seems to be applied to a meeting of several, rarely a considerable number, of people together, while *toga*, or *tooga*, is quite unknown. The words of the songs are in an old language, which is now practically forgotten, and cannot be translated even into modern Rotuman

by the natives themselves. Only a word here and there can be recognised, and from these no sense could be gleaned. Probably the meanings of many of the words have changed with the decadence of the old language.

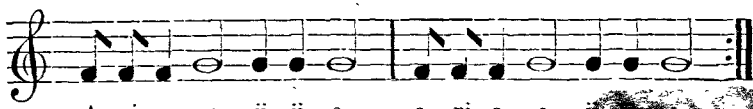
The *tau toga* may be sung either on the feet or sitting, the time being always given by beating on a folded-up mat with the hand. The song merely consists of one verse, which is repeated generally three times if standing in lines, the lines being changed thrice towards or at the end of the verse. The *mak* is usually commenced on the ground, when suddenly all rise and form quickly three rows, each having three girls on one side and three men on the other, and all facing in the same direction. At the end of the first singing of the verse, the first row becomes the third row, and the second the first, the singers crossing one another directly. The chief motions are made with the hands pointed in different directions, while the feet are firm, knees slightly bent and pointed outwards. At the end of the second repetition, the original third row is in front. With the sudden call of "Oh!" and three claps of the hands at the end of the third repetition, all sit down with their backs towards the front. The time is as a rule very slow; the lines often rhyme, and are in minor fifths. The *mak* always ends with a long "Oh!" three claps of the hands, and a low, deep, drawn-out "Eh!"

THE TAU TOGA.

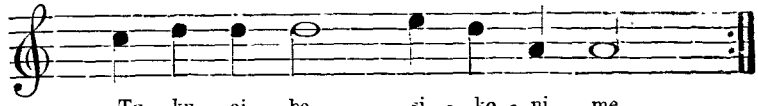


Ravak e otomutu e mua pipi
Ma sea masoan on oluum
Lagi jau ma hoani se Rotuam
Ko havei i ka solia ikoak.

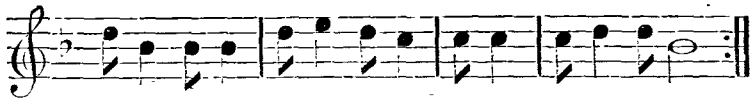
THE CATERPILLAR.



THE FUNAFUTI SONG.



TOKALAU MAK.



Tok(e)rau uog uog
Tir(e) oun far(e)te
Ko fan(o)
Ou fan(ou)re re.

UEAN SONG.



SAMOAN SONG.



A particular song, probably of modern growth, may be called the caterpillar, as the motions are supposed to be representative of those of a caterpillar as it crawls up the stem of the *papoi*, straightening itself out, drawing its body up together, feeling for a fresh hold, etc. There are generally three rows, as before, and all move up the house or forward as they sing, nearly bent double.

Of *mak furou*, or foreign songs, there are several which vary a great deal in the movements of the hands, but as a rule are sung in much the same way as the *tau toga*, when sung standing; the changing of the rows is managed by the back row coming round the sides to the front, and not passing each

other in the middle. There are further movements of the feet from side to side, and also of the body. The songs are shorter, and do not necessarily rhyme; they are repeated perhaps two or three times before the rows are changed. The time is given by striking a rolled-up mat, or by the clapping of the hands or the stamping of the feet. Altogether the *mak furou* are more lively than the *tau toga*, and there is in them far more scope for movement.

Among the favourite *mak furou* is the Funafuti song, supposed to have been introduced by a canoe from that island driven on shore here; it is sung with much spirit and go. The Tokalau *mak*, given, is a typical *mak furou*. The next, "*Tau te furiă tog*," is a beach song; it is very rarely sung in the houses, as there is far more dancing in it, movements up and down of the legs, clapping and pointing of the hands, and contortions of the body. The time, too, is much faster, and gets quicker at every repetition. I think that it is not improbably an introduction from Uea or Wallis Island, as it very greatly resembles several of their songs. The last song, "*Tene, tene*," is a Samoan song; it is quite the pleasantest and least harsh of all. The first line is repeated twice, and the whole or a part of the second. It is usually sung in two lines with hands joined facing one another; as they sing these lines dance in opposite directions up and down in front of one another.

To Dr. E. A. Muller, of Sydney, who has heard these songs on several occasions, I am indebted for the music. He has also given me the following note:—"All their songs move between one octave and are sung in unison, except when both men and women are singing together. Then the men sing in a lower pitch, about a minor fifth lower, but do not follow the melody closely, so that they rather keep up an accompanying noise in a lower note. Generally the change in rhythm is very little in the different songs, mostly an andante movement, while some songs, more indicating a humorous theme, are in allegro style. The melody consists generally of three or four different notes, the first one three or four times repeated, followed by a note a third higher and going back to the first, again three times followed by a higher note or a lower one, finished always with an unharmonious flat note."

XXII. MEDICINE AND SURGERY.

The Rotuman of the present day is singularly ignorant of even the most elementary medicine and surgery. As before pointed out (p. 468), the priests were the doctors; it was a mystery handed down from father to son with the office.

When Christianity began to be taught, and white men settled on the island, the mystery was guarded still more carefully, and most of the art has unfortunately now been lost. At the present day medicines are dispensed by the Roman Catholic priests and the Commissioner, but Fijians resident on the island are very generally called in, if the patient does not recover instantaneously.

The great Rotuman cure for every pain or ache in the body is massage of a very severe nature, either with cocoanut oil or the oil of the *hifo* nut (*Calophyllum inophyllum*); usually a small quantity of the second is applied, and then the part rubbed vigorously with cocoanut oil. Cold water too for many ailments is much believed in. Recourse in fevers used to be had almost at once to cold water bandages, a piece of the native cloth often being left in the water to act as a sort of wick, to keep the whole damp and cool. The natives have no vessel in which water can be boiled, except the shell of the cocoanut, and hot water, too, is never used. It was only by threats that I could get any native to allow me to use hot water for washing any wound or sore, and hot poultices were invariably taken off immediately I left the house. Native poultices are made of the leaves of the taro and hibiscus crushed up; I was also informed by Marafu that they used to be made of dried arrowroot and the dried seed of the Tahitian chestnut, and that a certain amount of turmeric was always mixed with these. The great cure, though, for all wounds and sores is to roast them for several hours in front of a slow fire; I found the skin of one man with acute sciatica absolutely shrivelled up and burnt along the left side from this, massage having been tried first and failed. The practice of cutting the body where any pain is felt, which is common in Fiji, I never found any traces of.

The most prevalent disease in Rotuma is undoubtedly yaws, or framboesia, known generally under the Fijian name of *coko*, though I also heard the Polynesian name, *tona*, applied. It is said by the older men to have been an introduced disease in comparatively recent years. Certainly the older people of both sexes do not seem to have so many or such large scars from it as the younger generations, and on some no traces of it are to be seen. The fact, that the disease is due to inoculation, is well known to the natives, whom I have known encourage their children, when they have reached the age of about two years, to play with other children, who have the disease, in order that they may get it. Commonly the child gets exceedingly feverish, and then suddenly a number of pustular sores break out, particularly on the face, hands, and round the waist. The child may be in danger for some days after this, but usually

the fever quickly dies down; the sores increase in size, and probably cover the whole of the mouth and nose, reaching a maximum in about a couple of months. They then gradually commence to dry up, and if the cure does not take place too rapidly, no further danger need be apprehended, except in combination with extraneous circumstances such as teething, etc. If the sores, when they first break out, are healed too quickly, as by European antiseptic treatment, they tend to break out again in a much more virulent form, and death often supervenes, or else permanent disfigurations of the face, particularly the nose, or even blindness or lameness. The natives say that it is a growth, which has to come out, and that, if it is not allowed to do so properly, it will continue to grow in the bones and deeper tissues. If the child passes to manhood and then contracts the disease, it is generally fatal, or else leaves the man so shattered in health, that he falls a victim to the first epidemic. The child is carefully guarded for the first year and a half against the disease, and then the sooner it comes, the better the parents are pleased. No remedies are applied by the natives, but great care is taken to keep the child cool and damp, when feverish, and its bowels open: a purgative draught used to be made from the fruit of the papaw and certain leaves, but now large quantities of castor oil are sold by the stores. A person, who has once had this disease, enjoys afterwards complete immunity from it; I have seen a mother feed from her mouth a child, whose lips were all swollen with it, without any injurious consequences to herself.

Terrible ulcerations of the skin of the body and limbs, particularly the leg, are not uncommon among adults, especially women, but they seem to be easily cured before the age of from forty to fifty years; they are probably of a granulomatous nature, and are mainly due to the neglect of sores caused by dirt, poisoning from coral, etc. Such sores always at first fester, but, if carefully kept clean and open, heal in a month or two. They are very much neglected by the older people, particularly the women, are often left uncovered and encouraged to heal over quickly, only to break out later perhaps all over the limb, a putrid mass of flesh full of maggots; the mischief has probably now extended to the bone, the foot doubles up, the limb shrivels, and all hope of cure may be abandoned. Similar ulcerations also occur among women, not uncommonly about the age of forty-five, in the breasts; it is in no way of a cancerous nature, as no disease of that kind is known. For all these sores, washing daily with a strong solution of corrosive sublimate has a wonderful effect, especially if accompanied by doses of potassium iodide. I cannot resist the

idea that really these ulcerations and yaws are of a syphilitic nature and give immunity from this disease, which is absolutely unknown on the island; other diseases of a venereal nature too are very rare, owing to the extreme cleanliness of the women.

There is a consensus of opinion among the natives that coughs, colds, pleurisy, and pneumonia have been introduced to the island in this century. This is scarcely likely, but from trustworthy testimony I think there has been a great intensification of them in recent years, due to changes in the mode of life. Undoubtedly, though, phthisis has been introduced in quite recent years; it is a disease of the nature and duration of which the people are absolutely ignorant. I saw myself on the island six cases of it, all in a more or less advanced stage; three were women who had borne children, a fourth was a woman about twenty-two years of age, and the other two were boys of from seventeen to nineteen. Both of the latter cases were in Malaha, where the disease is especially prevalent, owing undoubtedly to the cold damp land breezes at night, its villages being protected to a large extent from the trade winds; I found also in Malaha two undoubted cases of goitre, a disease which I do not remember to have seen in any other district.

Tokalau ringworm (*Tinea desquamosa* ?) was very prevalent formerly in the island, but, owing to European methods of treatment, has now become uncommon. In early stages it is readily destroyed by iodine, but chrysophanic acid is quicker, better, and more effectual in the later stages. Besides this, the skin often shows more or less ramifying patches of a lighter tint, but without any desquamation. In some cases these yield to the same treatment, and are, I think, due to a different *Tinea* or some other parasite; in other cases they are perhaps the after-effects of the regular Tokalau ringworm. The only native method of treatment is massage with oil, especially after bathing in the salt water.

Fevers of a malarial nature are not uncommon on the island, but they are much confused with the fevers which always accompany elephantiasis; they are especially prevalent on the leeward side. They are certainly distinct from the fevers of elephantiasis, though this disease usually quickly supervenes and is considered as the result of them. I saw two cases of such fevers, the patient in one case having had them for about two years, and in the other case for longer than he could remember, but in neither case were there any visible signs of elephantiasis. I saw two cases, too, among children of what seemed to me to be mild typhoid fevers; the two houses were within a stone's-throw of one another.

Elephantiasis is certainly the worst disease that the adult

Rotuman has to contend with; it affects the Europeans in the island equally as much as the natives. It attacks the men in particular, at least 70 per cent. over the age of forty years having it in a more or less virulent form; of women over the same age I should think not more than 20 per cent. are affected. Among the men it takes the form in particular of elephantiasis scroti. Of twenty-eight men, fifteen had it in the scrotum alone, nine in the scrotum and legs, three in the scrotum, legs, and arms, and one in the arms only. I never saw any cases among men where the legs were affected without the scrotum also being enlarged. The scrotum does not, as a rule, grow to a very large size until the man gets old, probably owing to the fact that it is usually kept bound up by cloths When it becomes too large, recourse is had to lancing with a shark's-tooth lancet. In the old days, too, the same instrument was, according to Marafu, used to remove the scrotum, the operation being performed in front of a huge fire and taking about two days. The legs and arms, too, used to be cut right down the surface, the cicatrices being supposed to prevent them from swelling further. Among the women the disease is not nearly so prevalent, but it seemed to me that usually both arms and legs were affected. I saw one case of the form, known as pudendi. From the way it was spoken of, I do not think it is of exceedingly rare occurrence on the island. The second attack of the fever usually comes about six months after the first; then the attacks increase until perhaps they occur for a short period fortnightly, after which they gradually decrease in frequency. There is a distinct increase in size of the organs affected after each attack. Inquiries as to the origin in individual cases gave me such replies as "A night's fishing on the reef," "Sleeping in the bush," etc.; most could give no cause or only supernatural ones.

Periodical epidemics of bad eyes pass over the island; the cornea gets clouded, and sight is considerably impaired. A few drops of sulphate of zinc twice a day in the eyes usually effect a speedy cure; the native remedy is the raw juice of a certain tree with large palmate leaves. Cases of blindness from this disease are now quite common owing to neglect.

Serious diseases other than the above, except such as are of an epidemic nature, are almost unknown. Dysentery passed through the island in 1882, but does not seem to have made permanent lodgment; constant requests, on the other hand, are made for opening medicine, and doses of four ounces of castor oil are often necessary to give relief. Among the women the menstrual period is often accompanied by headaches, nausea, and amenorrhœa, or stoppage of the menses. In many cases,

though, I believe, these are due to native medicines, possibly preventative, administered by the old women.

The lancets are made with the pointed or serrated teeth of the shark, as desired, tied firmly on a slightly flattened piece of wood, about the size of a pencil, the tooth never being bored. The point of the tooth is pressed on the gathering it is desired to open, and then hit sharply by a piece of stick to drive it in. Broader teeth, with serrated edges, were used similarly mounted for operations in which cutting was required.

It may be interesting to note that I examined the blood of eight males, in six of whom I found the *Filaria sanguinis hominis*; the other two were boys, aged about sixteen and nineteen.

XXIII. DECREASE OF THE NATIVE POPULATION.

The population of Rotuma has undoubtedly been steadily decreasing during this century. It was estimated by the Rev. James Calvert[1] that in 1864 "there would not be more than 3,000 of any generation for whom the Scriptures would be available." In another place he states that there "dwells a population variously computed at from 3,000–5,000."[2] The Rev. Father Trouillet, of the Société de Marie, informed me that he should estimate the population in 1868 as certainly under 3,000, while Mr. Jacobsen, a trader, estimated the numbers in 1878 at 2,700. Native evidence shows that at the west end about 1870 Halafa had a population of fifty fighting men, while now it has only five; Lugula, on Sol Mea, had then forty to fifty men, but now does not exist; Fatoitoa and Hajaojao, near Halafa, were at least equally big; the former being deserted only twelve years ago; Maftau, Itomotu, and Savaia about seventy men each, while now they have not more than one hundred between them; the island of Uea a total population of about ninety, now thirty. On the other hand, at the west end Matusa has now a considerably larger population.

At the east end in the bush were three big towns: Hoite, Rahiga, and another on Sol Hof, the remains of which I have seen. I think, perhaps, they had about forty houses between them, and allowing eight per house, by no means an overestimate, the population would be about three hundred and twenty. Besides these, there were many smaller towns in the bush here. On the coast, the *hoag* called Rotuma has now one

[1] "Missionary Labours among the Cannibals," 1870, p. 586.
[2] *Loc. cit.*, p. 552.

house, while formerly it had about ten. There are, too, plentiful remains of former occupation in house-sites and burial grounds between the centres of population in Noatau and Oinafa; through Juju also there are even more plentiful remains of houses and population. But, on the other hand, at the east end of the island certain centres, usually round churches, at least in Oinafa and Noatau, have certainly increased in numbers, though not to any extent proportional to the decrease of others.

Examining the remains of planting, it appears as if the whole island, wherever practicable, was at one time tilled. The land, where there is a good and deep soil, is, and was, no doubt tilled regularly from year to year, while the rocky country was planted more or less in rotation with yams and *kava* Even on the steepest slopes, there are signs of clearing, the summits alone being left crowned by the *hifo*. The bottoms of the craters of many hills used to be planted too; in the crater of Sol Satarua, the *lulu* as it is termed, there are still bananas growing, but planted so long ago that the fact that it had a *lulu* at all was almost forgotten.

Taking all the facts into consideration and making all due allowance for exaggeration in native evidence, from a consideration of the facts on the spot, I estimate that the population in 1850 cannot have been short of 4,000, and that at the beginning of the century there were nearly 1,000 more. The census in 1881 showed a population of 1,126 males, 1,326 females, total 2,452, which in 1891 had decreased to 1,056 males, 1,163 females, total 2,219. In this last period of ten years there were four epidemics, viz., dysentery in 1882, whooping-cough in 1884, dengue in 1885, and influenza. The latter was very severe at first; the last epidemic of it was in 1896 and very mild, though the deaths of about eight individuals, mostly old people, must be ascribed at least indirectly to it. If these epidemics had not occurred, the decrease, I feel sure, for the decade would have been very small indeed.

Inquiries from the natives as to the decrease put in the first place the emigration of natives from the island to the pearl fisheries of Torres Straits, to Fiji and elsewhere, as sailors. In the old days it was not uncommon for a hundred or more young men to leave the island in the course of a year, and of these certainly not more than one-third ever returned. In the years, too, of epidemics or hurricanes, still more would leave, though even after the latter there was always sufficient food for the support of all. To this cause and epidemics I ascribe mainly the decrease in the native population. Many epidemics are remembered, though few details are known. When Marafu

was a boy, measles ran through the whole island, and he believes carried off about one person in every house. To epidemics, brought by the first Roman Catholic missionaries (p. 401), he ascribes their non-success and subsequent almost expulsion. Marafu, too, remembers to have heard of an epidemic which followed "the great Malaha war" (pp. 473–4), and was still more fatal. Now, owing to the great cleanliness of the people, good sanitary arrangements, and better food, epidemics are far less feared and less fatal.

Another cause was said to be the increased and increasing immorality of the people with the increased use of preventative medicines, which weaken the mother and future children. As good food as could be devised for the children seems always to have been known, and in recent years the use of tinned milks, so strongly urged by the present Commissioner, has undoubtedly still further diminished the mortality, so that I should not think at present that it is much greater than among the poorer classes of our larger manufacturing towns. The stamping out of yaws, too, I can scarcely think, would be beneficial, as I believe that, if allowed to run its proper course, it gives the child immunity from other and more serious troubles in later life.

Before the greater prosperity of the people generally, together with better living, dating to some extent from the annexation to Fiji in 1880, I think that some slight decrease might be traced to inbreeding, which, I think, may affect the number of the children and the stamina of an isolated people, who have lived for a long period under precisely the same conditions. The customs of the island were opposed to the marriage of nearly-related people, and new blood was occasionally introduced by drifting canoes, so that I do not believe that this could be put down in the old days as a cause of decrease, considering that keen struggles constantly took place between districts, and undoubtedly between man and man. When a new land was colonised by the Polynesian, the inbreeding must have been very great, and yet, in Captain Cook's time, most of the islands in the South Pacific seem to have had large and flourishing populations; the new mode of life and the struggle for existence undoubtedly gave, even under these unfavourable conditions, a new vitality to the race. So I think that now the ready adaptability of the Rotuman to the changed conditions, brought about by the coming of the white man, is undoubtedly preventing the complete annihilation of his race, and is giving it an increased lease of life for many years. The variety of the stocks in the stores, the great quantity of tinned meats and milk, of biscuits and rice, of clothes and dress fabrics sold, show

this adaptability, and are steps in the right direction. Stone houses have now almost entirely taken the place of the old native house, but I doubt whether this is a healthy step. The present Commissioner has done his best to encourage the people to trade, and though his measures are looked upon by many of the older natives with the greatest suspicion, they have during his term of office in the last five years shown a marked effect in a considerable increase of the population, taking the place of the old decrease, while at the same time there have been more natives leaving the island than returning to it.

Undoubtedly the most debilitating disease, that the native has to contend with, is elephantiasis, which has shown no signs of abatement. There is scarcely an adult native on the island, I believe, who has not got *Filaria sanguinis* in his blood; in the few I examined, if I took the blood sufficiently late at night, I never had any difficulty in finding the animal. If the disease is due to this, it might be greatly minimised by the covering over of the wells, so as not to allow the mosquitoes to breed in them. At present all teem with the larvæ. The more immediate cause of the disease coming on seems to be a chill or something of that sort, and these are readily caught by the men from the custom of wearing thick coarse clothes in the day-time, but very thin loin cloths at night; they like, too, to sit about on the beach, after play at nights, so as to get cool. The women, on the contrary, always wear thin loin cloths, and at night commonly a sort of blouse as well, and for this reason do not show the disease nearly so frequently.

The drinking of *kava*, now interdicted by the Wesleyan Mission, was, I believe, most beneficial; the effect is that of a mild tonic. It was not drunk at any time extensively by the very young men, but supplied a tonic at that period of life at which it was most needed. Elephantiasis comes on especially about forty, when a man has passed his prime, and I think that this interdiction has tended, and is tending, to increase the disease, and should be abolished.

It is interesting to note that the few white men who have married Rotumans have, as a rule, had very considerable families; Marafu and others counted up one night nine cases with thirty-nine children known to have lived beyond the age of childhood. Many of these half-castes are now married to native men or women, and generally have by them large families: the next generation becomes merged with the Rotuman, but still shows increased fertility. This factor in the increase of the race is now a small one, but it is steadily growing in importance, and will, perhaps, in time have a considerable effect.

XXIV. LANGUAGE.

The Rotuman language is not an isolated tongue, but a member of a wide-spread family of languages, extending throughout Polynesia. To the ear it sounds, perhaps, considerably different, owing to a peculiarity, in the fact that the Rotumans have a great tendency to transpose the last letter, a vowel, with which all their words should end, to the middle of the word. Mr. Hale in the Wilkes Expedition Report remarks[1]: "A general law seems to be that when a word stands by itself, not followed by another on which it depends, it must terminate in a vowel; and this appears to be the original and proper form of most of the words; but when combined, in any way whatsoever, with other words an alteration takes place by which the concluding syllable is transposed or contracted, as that the consonant shall be the final letter." Thus in ordinary conversation the name Rotuma is often turned into Rotuam; *hoga* is always *hoag*; the word *oipeluga*, a club, I have heard pronounced as *oipeluag* and *oiapelug*. In the text, I have as far as possible kept the words as pronounced, but in the short vocabulary (App. II) I have tried to spell the words in accordance with their original pronunciation. Another remarkable thing is the great facility with which the Rotumans will coin a word for anything new; peculiarities of the animal or thing will be taken, and from these a name made, somewhat in the German fashion. Thus the scorpion is known at one end of the island as the *mamasse*, the animal which eats at the tail, and at the other end as the *monpuoga*, the animal which eats the *puoga*, a small worm in the bananas.

For the purposes of comparison, I compared a rough vocabulary, which I first made, of about two hundred and fifty words with the words of the same meaning in Fijian and Samoan. Of these I found that twenty-nine words were related to both Fijian and Samoan, and evidently were derived from the same roots, ten to Fijian alone and thirty-three to Samoan only. The Samoan I obtained from the Rev. George Pratt's dictionary, but the Fijian by natives, who, knowing several dialects, especially searched for words related to the Rotuman. With the Gilbert islands there were supposed in Fiji to be considerable resemblances; I could make no general comparison, but the few words, which were the same, were all of general distribution through the whole Pacific, or else comparatively recently introduced, names of weapons, instruments, etc. Compared with Malay, by means of Dr. Bikker's vocabulary, there is scarcely a trace of resemblance to be found.

[1] *Loc. cit.*, pp. 469 *et seq.*

It must be noted, though, that formerly in Rotuma there was a language spoken, considerably different from the present one; in it are most of their songs, and a few phrases from it are still used, but their meaning has been lost. In addition, there was a peculiar language, or rather set of phrases, used to and in speaking of the *sou* and other chiefs. These have been lost owing to the coming of the missions and the abolition of the *sou*. It was suggested by several of the old men that the change of language was due to the coming of the Niuafoou people to the island. In the vocabulary the words, given in the Wilkes Report, are inserted for comparison in brackets where different; they may possibly throw some light on this old language, as many are quite different from the terms I found in use.

While Samoan has fourteen letters in its alphabet—*a, e, f, g, i, l, m, n, o, p, s, t, u, v*—it is necessary to give the Rotuman four more, *k* and *r* being found as well as *t* and *l*, and the *h* being often sounded very distinctly, while in such a word as *sosoghi*, sister or brother, it is scarcely aspirated at all, and such a word as *haharagi*, young, in the method adopted by the Rev. George Pratt for Samoan, would certainly be spelt *'a'aragi*. In set speeches all words commencing with an *h* have it very distinctly aspirated. The letter *j* must also be added to indicate a sound resembling *ch, ts*, and the English *j* about equally. It occurs in the names of many places on the island, but is otherwise very uncommon; examples are Juju, Atja, etc., also *nuju*, the mouth. Vowels are pronounced as in the continental method. I know of no meaning dependent on the quantity, but it is a mark of respect, when speaking to a chief, to lengthen all or the chief vowels of each of the substantives, thus laying great stress on them. *G* is always nasal, and pronounced *ng*. All the other letters are pronounced as in English.

The same vowel is not generally repeated in a word without a break between, unless the word is a compounded one, as *solgaasta*, the north wind; *saaraara*, a centipede; *huneele*, the beach. In these cases each vowel is distinctly pronounced. The diphthongs are *ai*, as in *tekaikai*, a shell; *au*, as in *rau*, tobacco; *oi*, as in *hoina*, a wife; *ou*, as in *filou*, the head. Other vowels occurring together are pronounced each separately; thus *haephaep*, the hand, is *ha-ep-ha-ep*, *apioiitu*, a priest, *a-pi-oi-i-tu*. I am not really certain that any of the diphthongs are properly so, as in speaking slowly many are broken up into their component vowels. For emphasis almost any word may be repeated, but the repetition often changes the meaning; thus the terms *manu* and *huf* are applied broadly to many

small flying animals, but *manumanu* is a bird, and *kufhuf* a bat.

The accent properly, in the Polynesian group of languages, is placed on the penultimate syllable, and this rule holds for Rotuma, except that when a chief is being spoken to it is often thrown on the first syllable. The transposal of the last vowel, too, often throws it on the last syllable. It is in no case thrown on the vowel, thus transposed.

In Rotuman there is no article definite or indefinite. The Wilkes Report gives *ta*, one, definite and indefinite, used for that, as opposed to *ti*, this, both being used as postfixes.

The names of natural objects, such as trees and animals, are mostly simple and indigenous to the island, or to Polynesia; to these must be added such simple manufactured articles, as the people may be supposed to have known, before they migrated to Rotuma. Compounded nouns usually indicate that the article, animal, or tree has been but recently introduced; exception however must be taken to articles of food or manufactured articles which have been brought by natives of other islands with their own names. The verbs and the nouns, or perhaps adjectives, for similar meanings are the same.

Number does not properly exist. For the plural numerals, or words such as imply a number, are used. *Taucoko* (pronounced *tauthoko*), a Fijian word, is now applied to people, while *atakoa* is applied especially to animals. *Tene*, many, is used generally for inanimate objects, such as stones, trees, etc. The Wilkes Expedition Report gives also *maoi*, many.

Gender is formed by the affix of *fa*, man or male, and *honi*, woman or female, usually shortened to *hon* or *hen*. In most cases among the larger animals, the male and female have separate names.

Case is indicated by prepositions. The genitive may be indicated by one of the possessive pronouns. *K*, or *ka*, is used as a prefix, and applies especially to movements, such as entering and leaving a house; it is particularly employed where an adjective is used. *Se* implies the act of moving forward to a place, and *e* the act of movement from a place.

The adjectives as a rule follow the noun. The numerals do not go above *kiu*, 10,000; they are almost for the smaller numbers identical with those of Samoa and Fiji. The pronouns are given fully in the appendix; compared to the rest of the language, their formation is very complete.

The tenses of the verbs are formed much in the same way as in many other Polynesian dialects. Past tenses are very generally formed by the addition of an adjective, used as an adverb, thus:—

Lao	To go.
Gou lao	I go.
Gou la lao	I will go.
Gou lao vahia....	I went.

The passive voice is usually formed by changing to the active. The Wilkes Expedition Report says, "The directive particles *mai* and *atu* are found in Rotuman under the forms *m'* and *ato* (or *at'*), suffixed to the verb. Thus *lao* or *la*, which signifies to go or move, becomes *laato*, to go away, *leum*, to come."

The affirmative adverbs are *o*, *ou*, and *e*, and negative *igikei*. *Igikei* is also used for not, but *kat* is a more polite term. "The negatives are *kat* (or *kal*) and *ra*, the first of which usually precedes the verb, and the second follows."[1]

XXV. LEGENDS.

I have considered it best to give these legends as near as possible in the same words as they were related to me; by changing the words much of the force, with which they were related, would be lost. At the end of each I have added such notes, as seemed to me to be necessary.

(*a*) *Legend of Rahou* (1).—Under Gofu, the king of Samoa, there was once a great chief, called Rahou, who only had one daughter. She married and bore a female child, called Maheva. Gofu about the same time likewise had a daughter, and, as Rahou was Gofu's head chief, the two children were brought up together. They were constant companions, and used to be always on the beach playing, their favourite amusement being fishing for *penu* (2). One day each caught one, but Maheva's was the finest. On the king's daughter demanding it, she refuses to give it up, and in return is taunted about one of her feet, which is deformed. Maheva begins to cry, and runs to Rahou, who inquires what is the matter. She tells him, and he is wild with anger. On the next day two girls come called Hauliparua, and Rahou tells them about the whole affair. In return they order him to make a basket that night, and promise to tell him on the following morning, what he is to do. He is told to fill it with sand, and then to embark in his canoe. He does so, calls together all his *hoag*, and all get on board, carefully carrying the basket of sand. Two *arumea* (3) appear next in front of the canoe. "You will battle away on the sea as long as the *arumea* go over your head. As soon as they have gone far enough, they will sing to you, and you will drop the basket overboard." They then travel on for many days, with the birds

[1] Wilkes Expedition Report.

in front. But at last the *arumea* sing, and Rahou throws the basket over the side. Rotuma then comes up with the canoe on top of it. Malaha first appeared, and then the rest, all covered with bushes and cocoanut trees.

One day Rahou thinks he will take a walk round the island, and place a taboo on the different cocoanut trees he may find; he does so, using green cocoanut leaves. On the same morning comes a man, Tokaniua, whom Honitemous (4) gets hold of; she tells him to follow Rahou and place a dry cocoanut leaf under each of Rahou's green leaves as a taboo. He follows Rahou accordingly right round the island, and back to Malaha, where Rahou has his abode. They meet, and Rahou asks Tokaniua where he comes from. He replies that he is on his own land, and appeals to his taboos on the cocoanut trees. They are going to fight, when Honitemous calls Tokaniua, and advises him what to do. Tokaniua then proposes that they shall set each other different tasks, the one failing to do the other's to leave the island. Rahou runs and gets a leaf of the *apaea* (5), which he dips in the water and then on the sand, telling Tokaniua to count the grains sticking to it. This he does correctly, and tells Rahou in return to count the waves breaking in on the shore. Rahou counts and counts, but at last gets wild with anger, and calls his people together; they go to Ulhifou (6), where Rahou pulls up the tree Filmotu, which he carries with him to Mafiri. Here he drives in the tree, and begins to tear the island to pieces, the earth he throws out forming Hatana and Hoflewa. Honitemous, seeing this, runs up, and, kissing his feet, begs him to spare the island. He pulls up the stick, and slings it away, making another small hole, Hifourua, where it alights. (7) Rahou then takes all his people, and retires to Hatana; on his way he turns three of the men into stone—Moiokiura, Papanouroa, and Likliktoa—as they had succumbed to the inducements of the Honitemous.

In Hatana Rahou lives quietly for some time, making two kings there. Once, visiting Rotuma, he makes Souiftuga the king. While Rahou is still living in Hatana, a boar pig comes down to Malaha. The people there kill it, and eat the whole except the head, which they send to Rahou (8), who, in a rage at this mark of disrespect, slings it away, forming Hof Haveanlolo.

Next Souiftuga dies, and word is sent to Rahou, asking him where he is to be buried. He calls the sisters Hauliparua to his aid again, and they summon the *arumea*, and direct them to show the people the place.

The two birds go up over hill after hill, but still go on over the highest, finally stopping at Seselo (9), since when all the *sou* have been buried there.

Rahou finally lived to an old age in Hatana, where he put two stones, Famof and Timanuka, into which he turned two chiefs. To Rotuma he gave its constitution and laws, finally dying and being buried in Hatana, where his grave, club, and *kava tanoa* are still to be seen (10).

(1) This legend is known to nearly every one on the island. I have received it on five different occasions and endeavoured to strike a mean of the different accounts. There are many other legends attached to Rahou; one makes Gofu come over from Samoa and bring him back there, relating his great achievements after his return.

(2) A favourite amusement with the children. The animal (*Remipes sp.* ?) lives in the sand between tide-marks, and resembles in appearance a large white wood-louse, with rather long legs. It is caught by tying the abdomen of a hermit crab to a bit of cocoanut fibre at the end of a stick. This is then allowed to wash in and out with the waves on the sandy beach. The animal, attracted by the smell, seizes it, and is quickly thrown over the shoulder on to the land above.

(3) A small bird about the size of a wren, black with red breast, a species of *Myzomela*.

(4) See the legend of Tokaniua. In narrating these legends no connection between them is ever indicated. Honitemous is, I think, a general name for all female wood and mountain spirits. This one is said to have come to the island, hidden in Rahou's canoe. The taboo is usually placed on cocoanut trees by tying round their base one or two half cocoanut leaves, which are supposed to represent the arms of the owner clasping the tree.

(5) A kind of arum with exceedingly large leaves, growing in the bush.

(6) A place, called Ulhifou, is still known in Malaha. Mafiri is a small hill at the west end of the island. On its summit is a hole 80 feet deep, caused by the subsidence of the lava, which at one time must have welled out of the top; near its base is another smaller hole, called the Hifourua.

(7) Father Trouillet, of the Société de Marie, who has resided on Rotuma for twenty-eight years, states that Rahou was pulling the island down, so that it might not be seen a long distance away by future navigators in these seas; and that he took up his abode on Hatana so that he might watch for any canoes which might

come and attack the island. One native stated that Uea was formed by a handful of sand, which Rahou found in the bottom of his canoe after he had thrown the basket overboard. Hof Haveanlolo is a shoal just awash between Hatana and Uea.

(8) It is proper to send all strange animals, which may be killed or caught, to the chief. At a feast the chief's portion is the head of the pig. Certain rocks which stick prominently up are said to be the teeth of this boar, which fell out on the way to Hatana.

(9) A small hill in Noatau at the extreme east end of the island.

(10) There are three graves on Hatana supposed to be those of Rahou and his two kings. The former grave (Fig. 7) has merely a circle of stones over it, with a hollowed stone in the centre, while the latter have slabs of rock. The first bowl of *kava*, made by any party visiting the island, is always poured out on Rahou's grave. The club is exactly similar to the war club described (pp. 472–3); it is said to have been twice removed, but on both occasions the boat or canoe, in getting out of the passage through the reef, capsized. Great care is also taken that any one who desires to ease himself should do it between tide-marks, and not in the bush.

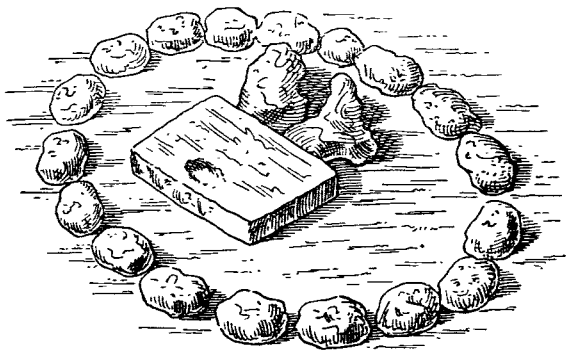


FIG. 7.—RAHOU'S GRAVE.
(The flat stone in the centre shows the depression, into which the *kava* is poured.)

(*b*) *Legend of Tokaniua* (1).—One day, "when there were no people in Rotuma," two women—Sientafitukrou and Sienjaralol—went to make *mena* (turmeric) at the well Tutuila. After they had rubbed up the *mena*, they mix four cocoanut shells

full with water, and burying them, leave them for the night. On the following day from these four shells is born a female child, called Sientakvou. The women then proceed to fill five more cocoanut shells with *mena*, and from these on the next morning is born a male child, called Tui Savarara. Sientakvou lived in Hotaharua, while Tui Savarara dwelt in Soukoaki. One day these two went to have a talk with one another, and stopped together, with the result that Sientakvou conceived. When they saw this, they were ashamed, since they were brother and sister, and so agreed to go and live in the bush. On their way to the bush Sientakvou told Tui Savarara not to look behind, for that, if he did so, the child would be born on the road. When they reached a spot called Kerekere, Tui Savarara looked round, and the child dropped out. Sientakvou then leaves the child to Tui Savarara, and goes into the bush, where she becomes a wild woman, under the name of Honitemous.

Tui Savarara wants to kill the child, but is afraid of the devil living in Sol Satarua, whom he sees looking at him. Meantime the child, who is called Tokaitoateniua, lay on a big stone, which ever since has had its menstrual periods, blood oozing up just in the same way as with a woman (2). Tui Savarara then lies down on the same stone and takes his *kukaluga* off. He puts the boy under his legs, and as far as possible makes himself appear like a woman. The devil sees, and thinks that he is a woman; he gets on top, and at once Tui Savarara opens his legs, and shows the child, which he says is the spirit's. The devil refuses to have the child, and Tui Savarara goes along towards Oinafa, carrying the child and thinking how he may best get rid of it. He decides to throw it away, and hurls it first from Kerekere to Sol Saka, and then from Sol Saka to Iflala. When Tui Savarara came up the third time, the boy, who was now called Tokaniua, tried to wrestle with him at a place called Hofpopo, but was again thrown, this time landing at Soukoaki, where Tui Savarara lived; in the fourth cast he is hurled to Niuafoou (3).

In Niuafoou the boy grows into a great fighting chief, but, when he gets old, returns to Rotuma to obtain a fighting man to help him. One day he is casting his net standing on a stone, Hofmea (4), when it opens under him and bears a child, called Pilhofu, who is all stone except his one eye and one of his big toes. Tokaniua then departs to Niuafoou with Pilhofu, whose invulnerability he proves with blows of his spear. He strikes him again and again, but at last, unluckily striking him in the eye, destroys it. Pilhofu then returned in disgust to Rotuma, whither he was shortly followed by Tokaniua (5).

(1) This legend is well known to all. The account given is compounded from an account, given me in English, by Susanna of Oinafa and an account furnished by four old men in conjunction.

(2) All the places mentioned in this legend lie in Oinafa. A large rough block of lava is pointed out at Kerekere, on the top of a ridge near Satarua, as the one with the periods, which several of the old people claim to have seen.

(3) This is the most northerly island of the Tongan group, and is about 470 miles from Rotuma.

(4) A small rock of volcanic stone 4–5 feet long on the reef opposite Savelei, in Itoteu.

(5) Pilhofu lies a stone in Soukata, in Oinafa; in shape is oval, about 9 feet long by 6 feet wide, and 3½ feet high. It is of lava, and looks like a solid bubble on the top of the lava stream. A medium depression is pointed out as the mouth, while immediately above it another represents the median cyclopean eye; close by is the old *fuag ri* of Tokaniua, a house foundation about 13 feet high.

(*c*) *Legend of Pilhofu and his son Tokaniua* (1).—Pilhofu had one son, whose name was Tokaniua, and whom he left in Niuafoou when he first returned to Rotuma. After a time, Tokaniua, who had become a great warrior, came over to Rotuma to search for his father, from whom he wanted help; he journeyed in a large double canoe, and landed at Soukama, in front of which lies the canoe to the present day with the curse on it that, if any one break it, a big wave will come and sweep over all the land.

Landing, Tokaniua first meets a girl called Leanfuda, whom he asks if she has seen his father. She refers him to Rosso ti Tooi (2), who tells him that he must ask Fetutoumal, a man living at Tarasua. He accordingly goes to Tarasua, and, in reply to his inquiries, is told that his father is in Upsese, a stone in front of Teukoi Point, combing his hair; further he is directed that, if he desires to see his father, he must quietly roll this stone back. But, when near Upsese, Tokaniua has to walk across the sand, and making a noise, is heard by Pilhofu, who at once takes to flight. Tokaniua pursues, but Pilhofu dives through a rock, and Tokaniua in following has great difficulty in stretching himself out sufficiently to squeeze through. But Pilhofu has turned himself into a stone, with the exception of one of his big toes, which Tokaniua seizes, and a conversation results.

PILHOFU. "Who is that?"

TOKANIUA. "It is I. Turn round, as I want to talk to you."

P. "Why do you pursue me?"

T. "I have done something you must help me in. We have been playing at throwing spears at bananas in Niuafoou. I have hit nine, and must hit the tenth to win. You must help me."

(At the same time a waterspout (3) comes, and drops both in Niuafoou.)

P. "Take me to where you have got to throw, and bury me there. Your opponents will throw first, but, as I am a stone, their spears will not stick in me or hurt me. When you throw, though, look at my left eye, which I will open, and there your spear will stick."

They throw, and Tokaniua's spear alone sticks. Tokaniua runs up, and seeing a drop of blood oozing out, throws a handful of sand on the eye, while all the people cry out, "*Moriere, moriere*" (4). At the same moment a strong whirlwind (5) came, and blew the sand into every one's eyes. It takes them, too, with some Niuafoou people, and throws them on Houa Island, off Oinafa. Here there is a small hole always filled with rain-water, and Pilhofu tells Fissioitu to go and fill his mouth with the water and blow it into his eye. Fissioitu goes to the pool, but finds that the whole surface has been covered with blood by the sisters Hauliparua. He sucks this off though first, and filling his mouth with water, cures Pilhofu's eye with it.

Tokaniua then went to Teukoi, where on his death he turned into the *atua* of that village, who was called Fretuanak (6).

(1) This legend was related to me by Wafta, the chief of Juju, at a meeting of the chiefs. Manava, the chief of Itomotu, indicated shortly the last legend with this, relating them of father, son, and grandson. There is a patch of stones on the reef in front of Soukama, in Juju, which are said to be the remains of Tokaniua's canoe.

(2) This is the title of the minor chief of Tooi.

(3) The word here used is *ahuhia*. Small waterspouts are frequently to be seen off the breaking reef.

(4) The term "*Moriere*" is much the same as "Well done." It is a term of applause, and is in common use at feasts, if an especially fine pig or a large quantity of food is brought by any one *hoag*.

(5) The term here is *mumuniha*. It has a very similar meaning to *ahuhia*.

(6) It is interesting to note that, while the first legend of Tokaniua is well known by all at Oinafa, it is nearly unknown in Juju. With the second the cases are reversed. The name Tokaniua still persists in Oinafa, and is always called first for *kava* in the island.

(*d*) *The formation of the isthmus, or Soktontonu* (1).—Once there walked through the sea to Rotuma from Tonga a great, mighty, and exceeding tall man, called Serimana; with him, floating on the spathe of the cocoanut flower, came his daughter Sulmata (2), a girl of great beauty and spirit. For a long time they remained in Rotuma, and Sulmata married its great warrior Fouma (3), who built a big *fuag ri* on Sol Sororoa, and took her to live there, while Serimana dwelt in Savaia.

After a long time, there came a whole fleet of canoes from Tonga looking for Serimana, with whom they took up their abode in Savaia. One evening the Tongans playing on the sand ran after some *juli* (4), and caught one, at which Serimana was frightened, thinking that they were getting too strong for him: accordingly he sends off for Fouma, who catches several very quickly. Next evening one of the Tongans threw up a canoe over Serimana's house, and caught it the other side as it fell. Fouma does the same, and Serimana is satisfied. On the next evening the Tongans put a big stone fence out from Savaia along by the beach with their left hands, and Fouma is conquered (5). The Tongans then talk of having a big fight with Fouma, and Serimana, who hears of it, urges them to try. Fouma meantime goes and makes an alliance with Onunfanua, another strong man and a left-handed one as well, who dwells in Solelli (6). Onunfanua tells Fouma that, if he will send to him, he will come on the fifth day after the fight has begun, but Fouma says that he will fight alone until the tenth day. Returning, Fouma jumps over the strait, and hastens to Sol Sororoa.

A long time passes, as the Tongans are afraid, but one day, when Fouma is returning from fishing off Halafa, he sees smoke on Sol Sororoa, and his house on fire. He rushes up and finds all waiting for him with clubs and spears. They make a rush at him as he mounts the hill, but he fends them off with his net and gets above them. They take to flight, but Fouma, slinging his net (7) over them, catches fifty, all of whom he smothers in the net. Going into his house, Fouma finds more than half his club burnt, but, in spite of this, rushes down to Maftau and fights the Tongans there for five days.

Meantime Onunfanua has been informed of the battle, and on the fifth day starts. On his way he hears two old men,

Sokanava and Mofmoa, saying that it is a good thing to kill Fouma; he quietly puts his club over their heads, and they, noticing a cloud on the sun, look up. Onunfanua asks them about what they are talking, but they try to put him off; he tells them that he has heard all, but forgives them on their agreeing to fill up the strait during the night, so that he may cross on the following day. They do so in the given time, and, on taking leave, tell him that Fouma is nearly done, and that he will be beaten unless he cuts a *hifo* tree down with one stroke of his left hand. Coming up, Onunfanua fights for some time with the Tongans, but, getting pressed himself, thinks of the counsel he has received. Warding his enemies off with his right hand, with one blow of his left he cuts right through the tree. The splinters kill more than half the Tongans, so that the remainder fly to their canoes, and with all haste set sail.

Fouma, knowing that Serimana really put the Tongans on to him, tells his wife that he will kill her father. She goes down to Serimana and cries aloud, but being afraid of Fouma, will not tell him what is the matter. On the following day Fouma came down, and with one blow of his club cleft Serimana and his house in twain. (8).

(1) This legend was related to me by Albert and Marafu separately. In the chart of Rotuma a well-defined isthmus is seen, dividing the island into a small western portion and a much larger eastern part. The breadth here is not 100 yards, and the whole is simply formed of beach sand. To the west the basalt of the hill of Kugoi shows undermining from wave action at some past time, showing that this isthmus did not always exist. There are, too, in the reefs on the west and south sides of the island here passages and deep holes, which, I think, indicate a former channel. There is a tradition of the isthmus, being built up about one hundred and twenty years ago by Tue, the chief of Itomotu, with large stone blocks and sand. About sixty years ago, too, it is remembered by some that the isthmus was again filled up by the women and children with baskets of sand. Albert informed me also that, when digging for the foundation of the church, a number of large blocks of lava were found. The derivation of the term Soktontonu is doubtless from *soko*, to join, and *tonu*, water.

(2) From *sulu*, the spathe of the cocoanut flower, and *mata* wet.

(3) Any tree, which grows up strong and straight, is called *foumatou*. The house site of Fouma is still pointed out on Sol Sororoa, in Itomotu. Savaia is that part of the shore flat, just east of Maftau.

(4) *Juli*, or sandpipers, are very common on the beach at low tide.

(5) There is now a stone wall at Savaia to keep off the inroads of the sea on the beach. It has been repaired three times in the last seventy years, but is now again nearly in ruins.

(6) A place on Sol Hof, in the Lopta division of Oinafa. It is curious how all strong men come from, and are supposed to live inland.

(7) The word used is *kiri*, a name applied to a casting net, a large one of which is 12 fathoms long by about 1 broad.

(8) There are many other legends of Fouma, and a few of Onunfanua, but most of these are mere tales, invented as they go on by the old men when sitting at a *fefeag*, or story-telling, in the evening.

(*e*) *The origin of the "Moa"* (1).—To Noava was walking one day from Pepji to Matusa, when he was met by Karagfono (2), who was a spirit in the likeness of a man, born of a chief and the spirit of his dead *koiluga* (sweetheart), made of a drop of blood, without bones.

Walking together for some time, they reach Soukama, where To Noava asks his companion to come into his house and have some *kava* (3). The women prepare everything, but only put a table in front of To Noava, seeing which Karagfono got up, and went out, returning after a few minutes with a dry cocoanut, on which he proceeded to sit (4). On perceiving from this that his guest was a chief, To Noava told the women to get a table for him.

After the *kava* and food are finished, Karagfono invites To Noava in his turn to visit him, and takes him right along through Matusa to Luokoasta (5), where To Noava inquires as to their destination.

Karagfono. "I am going to take you to Limari."

To Noava. "I am a living man, and how can you take me there alive?"

Karagfono. "I have power from the gods to take you. When I jump into the water, you have only to catch hold of the back of my *kukaluga*. Don't leave go till I tell you, or you will be drowned."

Karagfono then dives off with To Noava, and in a short time they reach Limari, where To Noava is much surprised to find dry land, with all sorts of fruits and food. But soon the other spirits smell out that Karagfono has a mortal with him, and inquire why he has brought a living man there. On this Karagfono takes To Noava and hides him on the beams of his house on a *fatafata* (6), but after a day and a half of this To Noava gets tired, and asks to be taken back to the earth. Karagfono agrees, and says, "I should like to make you a present before you go, as you were very kind to me on the earth. I am giving you a *moa fa* and a *moa honi* (7), called Sukivou. When these breed, you can have the young ones, but you must return the old birds to me."

T. "How can I possibly get back to bring them?"

K. "When the day comes to bring them, you will know it without being told, and you will find me waiting at the same place as we dived off."

Talking thus, Karagfono dismisses To Noava, who is carried out of the sea by Sukivou and landed at Luokoasta (8), whence he had dived down with Karagfono. Sukivou had ten chickens, from which all the fowls of Rotuma are descended.

(1) The fowl. I am indebted to Marafu and Wafta for this legend.

(2) Also called Sunioitu, but this is a general name for several kinds of *atua*.

(3) This is the same as asking a person to come in and have a meal. The *kava* is drunk first, and always followed by food.

(4) Indicates that Karagfono is a chief, and should have a table as well as To Noava.

(5) A point off Losa, literally *asta*, sun, and *luoko*, to dip.

(6) A bed of bamboos or sticks in the beams of the house, still common.

(7) *Fa* and *honi*, male and female, common affixes for gender.

(8) As they arise from the water, To Noava and Sukivou sing this song:—

"*Moasite Karagfono,*
Te moturere, ma Fakasifo;
Itivikio, viki vikia, otaro lao.
Sukivou hogo oojao;
Itivikio, viki vikia, otaro lao."

Most of this is in a language now lost, but the following is as far as possible a literal translation:—

"Karagfono knows not where we go,
To the island above, and Fakasifo,
Crowing, crowing, as we pass along,
Sukivou waking up the sleepers,
Crowing, crowing, as we pass along."

Moturere I have derived from *otmotu*, an island, and *rere*, above; it may however be the name of a place. *Ojao* is a word only used as applying to the biggest chiefs.

(*f*) *The turtle of Sol Onau* (1).—On the top of Sol Onau is a flat platform of rock about 25 fathoms above the sea, and overhanging it somewhat; near it was formerly a large playhouse. One day two girls came out of the house on to this platform, which has since been called Lepiteala, to ease themselves.

When one was doing so over the cliff, several canoes came suddenly into sight from round the point, a big *vouroa* (2) fishing. The people in the canoes see, and call out. The girl rises hurriedly in shame, but slips on the rock, and catching hold of the other to save herself, both fall into the sea below.

They are then changed into two turtle, the one white and the other red, and are called Eao. They still live in the deep crevices of the coral under the rock, and can be called up at any time by singing the following song (3):—

"*Eao manuse, ka Lepiteala*
Ai, ma vehia ka foro ole tufe,
Havei, ma foiak ia ka fau paufu,
He ta jauaki, ma moiea. Pētē."

There first appears usually in one big crevice the *sasnini*, swimming along, and later come the turtle, usually one at a time. They continue swimming about on the top of the water for a long time, unless any one calls out, "*Fieu* (4) *vouroa*," when they immediately disappear.

(1) Sol Onau, the island off Juju. There is a legend, similar as to details, about two sharks off the island of Makila, in the Solomon group. Captain W. W. Wilson, harbourmaster of Levuka, informs me that there is also a turtle at Batiri, Koro, Fiji, called Tui Nai Kasi Kasi, and that he has twice seen it called up.

I took up Mou, the chief of Pepji, and five girls to sing the incantation. Going on in front, I examined the place, and saw a green turtle. When the girls were singing the incantation the second time, the *sasnini*, a long, narrow, lanceolate fish, which always precedes the turtle in these seas, came slowly along,

but we saw nothing further. All the girls and Mou state that they have repeatedly seen the turtle, which is not unlikely, as the spot is a regular feeding-place for them.

(2) The name of the *sieu*-fishing, when many are partaking in it (p. 428).

(3) The meaning, as far as I have been able to get this song interpreted, is as follows:—"Come up, Eao, to Lepiteala, and finish the story for us, having been in the hot sun and tired in the season for the screw-pine, when it is in flower and fruitful. *Pētē.*"

The language is very antiquated. Lepiteala is from *ala*, to die; *ka foro*, to tell; *tufe*, people; *fau paufu*, the season of the *paufu*, a species of pandanus.

Each line runs in twelves. The time is similar to the *Tau Toga* (p. 489), but runs in a somewhat higher key.

(4) *Fieu*, the act of defæcation.

(*g*) *The coming of the "Kava"* (1).—In Faguta there lived a Tongan, a very strong and brave warrior, called Kaikaiponi. His wife was of a Rotuman chief's family, and had three brothers, Muriak, Afiak, and Koufinua, who lived in Pepji. War was declared against them by Tukmasui (2), the chief of Malaha, but they utterly defeated him, owing to the great valour of Kaikaiponi and his experience in war. As a reward, the brothers desired to make him the *sou*, and, in fact, to re-create the office for him, because from the time of Souiftuga, appointed by Rahou, there had not been any fresh *sou* appointed, this being long before the Niuafoou people came to the island. To this, however, there was much opposition, so that they compromised the affair by making his wife the *sou-honi*.

When the *souhoni* was the ruler, *kava* first came to Rotuma floating down from Samoa, from a place called Hihifo. As it passed Noatau, it dropped two stones, the Hofrua, just outside the reef. Round these rocks any crabs (3), prawns, or fish, that may be caught, are poisonous owing to the *kava* which has got into them. The root then drifted on past Oinafa to Fatu (4), where it touched the shore and left a tree, the *oinixeji*, which is of very hard wood, and grows nowhere else on the island. It then, finally, came on shore at the extreme west end of Lopta, from which place it proceeded for a walk along the road to Juju. But the *kava*, before reaching there, branched off and went round Sol Atja to a piece of land called Niuful (5), where it found a convenient hole, in which it planted itself and for a long time flourished.

But one day some dirt fell from a rat (6) in the roof of Kaikaiponi's house on him, and he, recognising the smell, tells all the people of the great drink, and a great search is started. At last they found the root, half burnt by Waromago, who was cleaning the land in Niuful. A great feast is held, and the root is cut into pieces and distributed all over the island, so that all may taste. Among others, one piece is sent to Fissoiitu, who is living at the back of Sol Satarua; but he does not understand its use, and throws it away. It takes root, and grows well, and from this piece all the *kava* in the island has sprung.

By the *souhoni* after this, Kaikaiponi had one child, a son, who one day went to play in the bush, and found two girls, Opopu and Rara, who had come down from *Lagi* (7), and were amusing themselves on a swing. Although much annoyed at being seen on the earth, they put the boy, at his request, in the swing, but he fell out and broke his wrist. In pain at the accident, he calls out for some one to fill the cocoanut shells with water for him, and the girls, alarmed at his cries, promise to do so. They depart, but as soon as they are out of his sight proceed to ascend to *Lagi* again. The people, who are hurrying up on account of the cries, see them, but they are too high for them to do them any harm. The people watch them ascending, and see them, after making a hole in the sky, pass through, and at the same time a great shower of rain came down at the spot itself, which is called Vakoi, and not only filled the cocoanut shells, but cured the boy as well.

Shortly after this Kaikaiponi and the *souhoni* departed in a large double canoe for Tonga, and never returned, while Muriak became the *sou*, and when he died his brother Afiak (8).

(1) This legend was related to me by Wafta, the chief of Juju, at a council meeting in Malaha; he was assisted by Marafu and the chief of Malaha. I afterwards heard that there are several songs sung by the *kava*, but unfortunately too late to get them transcribed. In Fiji the *kava*, or, as it is there called, *yaqona*, is said to have come from Tonga, but I could find no legend about it. On the Ra coast of Viti Levu the following story of its discovery in Tonga was told me:—

"A man was planting his yams one day, when he cut down a *kava* bush which was in the way. Presently he observed a rat, which began to gnaw the root, and fell down, apparently dead. He then, after watching it for some time, went to pick it up, but, to his surprise, it got up and began to run away. Accordingly he concluded that the root must be some

good, and so chewed it, and made *kava*. He found it very pleasant, and so it spread."

(2) Muriak and Tukmasui are names still to be found on Rotuma. Kaiponi, I am informed, is by no means an uncommon name in Tonga.

(3) There actually are poisonous fish and crabs off these rocks; one crab, the *fumapoitu*, is very dangerous. The fish and crabs, too, of Luokoasta, off Losa, are also dangerous. It is a common idea in Rotuma that the earth round the roots of the *kava* is poisonous.

(4) A place in the middle of Lopta. A large-leafed tree something like the *hifo* was pointed out to me as the *oinipeji*; I certainly cannot recollect having seen it elsewhere.

(5) This piece of land is still known by the same name. A deep hole is pointed out, where the *kava* first rooted itself, and from which it was removed.

(6) The Rotuman rat is *Mus exulans* (Peile).

(7) The sky, or heaven, the abode of good deities. If the girls could have been caught, their offspring would have been invincible, and would always have food ready at hand without doing any work. Among all Pacific Island people there is a general belief that the sky opens to allow the rain to fall. Certain andesite crystals, found on the top of the lava in Rotuma, are called *momonife*, literally chips off a thunder-cloud.

(8) I think this legend points to a hereditary *sou*, who was not only the *sou*, but a king temporal as well.

(*h*) *Rikolagi, or the house to heaven* (1).—When the people were building Rikolagi, a house to reach the sky (2), a man, Souragpol, started from Atmofu with a stone for its foundation from Tooi, his wife, Henlipehea, nearly falling to pieces (3) at the time. He passes Teukoi point, and comes to Fahafa (4), where he meets a man, who asks him what he is carrying the stone for, and laughs at him so much that he throws it down, and there it lies to the present day. This man then proceeds to call out the people of Teukoi, and, with Souragpol and his people, they go to Noatau to fight, refusing any more to build Rikolagi. They are beaten, and take to flight, with Noatau in pursuit. Souragpol reaches Teukoi, but being hard pressed, takes up a stone to hide under, and himself turns into a stone, telling the people to call his child Fuoga.

One day, when Fuoga was nearly a man, the Teukoi people were carrying food to the *sou* in Noatau, but they left behind them Fuoga, who was asleep. Fuoga however awoke, and

being hungry, makes after them, and catches them up between Pepji and Noatau. He has no food for the *sou*, and so pulls up a tree, off which he tears the branches, putting the stem over his shoulder. He forces the Teukoi people to give him all their food, which he eats; he then compels them to accompany him to Noatau. Here, reaching the *sou's* house, Fuoga brings on a fight, and kills the *sou* and all his strong men. He then proceeds to Rikolagi, where he has a great fight with the strong man (5) of the island, who is putting the ridge on the house; at last he wins, killing his enemy with one blow of his club and destroying the house with a second blow. He then takes the name of Fouma, and makes a Soukama man the *sou*.

(1) This legend was related to me by Friday and Marafu. They say that the Fouma, referred to in it, has no connection with the Fouma mentioned in the legend of the Soktontonu.

(2) In Noatau is a mound of earth, 12–13 feet above the general level and 40–50 yards in diameter, which is pointed out as the foundation of Rikolagi. There is a *fuag ri*, house foundation, called Atmofu close to Matusa.

(3) This phrase is a literal translation of the Rotuman, and implies that the woman may at any moment bear a child.

(4) Close to Teukoi. The stone lies on the road, and weighs about half a ton.

(5) A large stone in Noatau, cracked in three places, is pointed out as this man.

APPENDIX I. LIST OF THE LAST SIXTY "SOU."

1. Lapetemasui.
2. Tuitupu.
3. Laparere.
4. Muamea on ava ka noho e Sohoa.
5. Muatoirere.
6. Ifiuri.
7. Ifituga.
8. Fesartu.
9. Niuta.
10. Sourotuma.
11. Tafaki.
12. Muamea.
13. Tukmasui.
14. Souhoni Vakai.
15. Kaurafonua.
16. Rimakou.
17. Koufossi.
18. Taio.
19. Fonumonu.
20. Varomua.
21. Tui.
22. Marafu.
23. Mirava.
24. Tokoara.
25. Asekana.
26. Moniseu.
27. Sakumane.
28. Tausia.
29. Satapuaki.
30. Puka.
31. Ranaka.
32. Tokaniua.
33. Titafaga.
34. Irava.
35. Ravaka.
36. Tuaojao.
37. Gaogaofaga.
38. Fatafesi.
39. Fuatanafau.
40. Vuana.
41. Fatafesi.
42. Tomanava.
43. Solovalu.
44. Rimakou.
45. Tirasoko.
46. Otorevai.
47. Ragafuata.
48. Kaurasi.
49. Vavaoti.
50. Uata.
51. Patupolivarahina.
52. Furisifana.
53. Tuirolorava.
54. Marafu.
55. Pogisemari.
56. Tiarukea.
57. Sukamasa.
58. Moi.
59. Manava.
60. Matagitai.

This list is copied from one in the possession of the present Commissioner of Rotuma.

APPENDIX II. LANGUAGE.

Having been advised that a specimen of the language would be of considerable interest, I now give a list of upwards of three hundred words. Of numerals and pronouns I am also giving the Fijian and Samoan equivalents, and of such words out of my general list as seem to me to bear any relationship to Fijian, Samoan, or both languages. I am greatly indebted to Mr. Leefe, the Commissioner of Rotuma, an excellent Fijian scholar, for any merit the list may have. The Rotuman was written down by me first from the interpreter; the Fijian being then carefully added, the Fijian list was handed over to Gideoni, an ordained Wesleyan minister, a native of Rotuma, and by him translated into Rotuman, under Mr. Leefe's supervision. The Samoan list I compiled later from the Rev. George Pratt's dictionary, and by the aid of two Samoans in Fiji. I divided the list into words bearing a relationship to one another, in all eleven sections; the numbers in front of the words compared with Samoan and Fijian refer to these. The words chosen refer for the most part to objects of everyday use; others were to assist me in my inquiries about different points, as relationship, superstitions, etc.; and still others were merely for the purpose of comparison. When the list was being compiled, it was never intended for publication in such an incomplete form.

Numerals.

English.	Rotuman.	Wilkes Exp. Rpt.	Samoan.	Fijian.
1	ta, esea.. ..	ta, esea	tasi	dua.
2	rua	rua	lua	rua.
3	folu	tholu	tolu	tolu.
4	hake	hake	fa	va.
5	lima	lima	lima	lima.
6	ono	ono	ono	ono.
7	hifu	hithu	fitu	vitu.
8	valu	valu	valu	walu.
9	siva	siva	iva	civa.
10	sagahula ..	saghul	sefulu ..	tini, saga-valu.
100	tarau	tarou	selau.. ..	drau.
1,000	efe	hefit', kimanmana	afe	udolu.
10,000	kiu	kiut'	mano ..	oba.
100,000	kuimanamana..	.. .. ..	manomano ..	vetelei.
1,000,000	raurauvarevare	.. .. ..	.. ..	petele.

Pronouns.

English.	Rotuman.	Wilkes Exp. Rpt.	Samoan.	Fijian.
I	gou	go, gou	'ou	koiau.
Thou	ae	ai, ei	'oe	koiko.
He	ia	hati?	'o ia	koya.
We two	itara, amira	amia	i tawa	kedaru, keirau.
You two	aura	aua	'oulua	kemudrau, koikodrau.
They two	iria	eria	i taua	koirau.
We	omisi	amis	i tatou	keimami.
You	ausa	au, aus	'outou	kemudou.
They	irisa	eris	i latou	ko ira.
My	ontou	otou	lou, lota	noqu.
Thy	onou	o, ou	lou, lo'oe	nomu.
His	onou	ou	lona, lana	nona.
Our (of two)	otara	otonua	lo and la maua	nodaru.
Your (of two)	onomura	oua, omua	lo and la taua	nomudrau.
Their (of two)	oria	oria	lo and la oulua	nodrau.
Our	onaso	onus?	lo and la matou (tatou)	noda.
Your	onomusu	ous, omus	lo and la outou	nomudou.
Their	onaro	oris	lo and la latou	nodra.

	English.	Rotuman.	Wilkes Exp. Rpt.	Samoan.	Fijian.
2	Moon	hula	hula	mauli	vula.
	Cloud	aoga	aoag	ao	ou.
	Rain	usa	..	ua	uea.
	Wind	lagi	..	ta'ai	cagi.
	Night	pogi	..	po	bogi.
3	Land	hanua	hanua	fanua	vanua.
	Island	otmotu	..	motu	yanuyanu.
	Coast	ufaga	..	matafaga	baravi.
	Bay	fagpopotu	..	faga	toba.
	Reef	sau	..	a'au	cakau.
	Wave	peau	..	piau	biau.
4	Eye	mafa	matho	mata	mata.
	Nose	isu	isu	isu	ueu.
	Ear	faliga	thaliga	taliga	daliga.
	Mouth	nuja	nutsu	gutu	gusu.
	Tongue	alele	alele	alelo	yame.
	Chest	fatfata	fatfata	fatfata	sere.
	Mammæ	susu	sus	susu	sucuna.
	Back	fomafua	thomathua	tua	daku.
	Thigh	saga	..	ogavae	soga.
5	Branch	ra	..	la	tabana.
	Leaf	rau	rau, noho	lau	drau.
	Bark	uli	oihapa	pa'u	kuli.
	Green	yarava	foo	lau'ava	karakawa.

	English.	Rotuman.	Wilkes Exp. Rpt.	Samoan.	Fijian.
6	Fowl	moa	moa	moa	toa.
	Yam	uki	..	ufi	uvi.
	Orange	mori	..	moli	moli.
	Cocoanut	niu	niu	niu	niu.
	Breadfruit	ulu	ulu	'ulu	uto.
	Chestnut	ifi	..	ifi	ivi.
	Papaw	esu	..	esi	uaeleti.
	Kava	kava	..	*kava*	yaqona.
	Chew, to	mama	..	lamulamu	mama.
	Kava-bowl	tanoa	tanoa	tanoa	tanoa.
7	Bird	manumanu	manmanu	manu	manumanu.
	Fish	ia	ia	ia	ika.
	Owl	ruru	..	lulu	lulu.
	Butterfly	pepe	..	pepe	bebe.
	Fly	laga	..	lelei	laga.
	Lobster	ula	..	ula	urou.
	Mosquito	ramu	ramu	namu	namu.
	Coral	laje	..	lapa	lase.
8	Bailer	tata	..	tata	nimima.
	Bail, to	anu	..	asu	nima.
	Sail	lae	..	la	laca.
9	Knife	sere	sere	pene	sele.
	Beam	utupoto	..	utupoto	soko.
	Needle	sui	..	sui	cula.
	Spear	jao	tsao	tao	moiu.
11	Lock of hair of virginity.	sope	..	taupe	taube.
	Sleep	mose	mose	moe	moce.
	Well	vai	..	vai'eli	mataniwai.
	Path	sala	..	ala	sala.
	Dance	maka	mak	sa'a	meki.
	God	atua	atua	atua	kalou.
	Spirit	outu	lao	aitu	kalou.
	Beg, to	farate	..	fa'atoga	kerekere.
	Yes	o, u	ka	ioe, i, 'oe	io.
	No	igikei	inke, indi	e leai	segai.

Relationship. (1.)

English.	Rotuman.	English.	Rotuman.
Man	famori (fa).	Sister to a man	seghoni.
Woman	honi.	Sister to a woman	sosoghi.
Baby, female	le riri.	Husband	vavane.
Baby, male	le meamea.	Wife	hoina.
Child	le.	Marry, to	inose.
Boy	fa haharagi.	Son	le fa.
Girl	honi haharagi.	Grandparent on father's side.	makiga.
Father or uncle	oifa.	Grandparent on mother's side.	temamafua.
Mother or aunt	oihoni.	Cousin, distant	poisasiga.
Brother to a man	sosoghi.		
Brother to a woman	segvevene.		

Meteorological. (2.)

English.	Rotuman.	English.	Rotuman.
Sun	asta.	Wind	toga.
Star	hefu.	Wind, N. ..	solgaasta.
Storm	lagi maha.	Wind, S. ..	suruta.
Hurricane ..	lagi hoi.	Wind, E. ..	palgaasta.
Hot	sunu.	Wind, W. ..	maurea.
Cold	matiti.	Lightning ..	uere (oga).
Air	otfiti.	Thunder ..	fui.
Rainbow	asisikae.	Sunrise	asta-pala.
Light	tafa.	Sunset	asta-solo.
Sky	lagi.	Waterspout ..	ahuhia.
Day	terani (asa).	Whirlwind ..	mumuniha.

Sea and Land. (3.)

English.	Rotuman.	English.	Rotuman.
Earth (soil) ..	pera (thanthan).	Water	tonu.
Rock	hofu.	Sea-water ..	sasi.
Stone	hofu meamea.	Fresh water ..	mami.
Mountain ..	solo (thuagsolo).	Tide	volu.
Beach	huneele.	Ebb, to	fenu.
Cape	isu.	Flow, to	usae.
Reef (a shoal) ..	mafu.	Swamp	rana.
Current	au.	Land	faufana.
Passage (in reef)	sava.	Swim, to ..	rapi.
Sea	lui.	Dive, to	iopu.

The Human Body. (4.)

English.	Rotuman.	English.	Rotuman.
Head	filou.	Leg	la.
Hair	leva.	Foot	aftea.
Forehead	motara.	Shoulder ..	uma (nam).
Tooth	ala.	Wrist	kokonisiu.
Neck	kia.	Finger	kapae.
Hand	haephaep.	Nail	menu.
Arm	siu.	Thumb	kahae mafua.
Abdomen	efe.	Knee	fu.

Botanical. (5.)

English.	Rotuman.	English.	Rotuman.
Forest	togvao.	Grass	moasu (pa).
Tree	oi.	Dry	mamasa.
Root	vaa.	Screw-pine ..	hata.
Stem	huni.	Ironwood (*Casuarina*)	toa.
Flower	hasa ne oi (hue).	Bamboo	vau.
Seed	hula (leum).		

Food. (6.)

English.	Rotuman.	English.	Rotuman.
Pig	puaka.	Garden	veko.
Food	telaa.	Banana	pari.
Hen	ufa.	Plantain ..	faksara.
Turtle	hoi.	Tarrow	aana (a'aro).
Eat, to	ate.	Sago palm ..	oat.
Hungry	paate (masmas).	Sugar-cane ..	fou.
Drink, to	imo.	*Kava*-cup ..	ipu.
Thirsty	paimo.	*Kava*-strainer ..	nihou.
Dish	umefi.	Cocoanut scraper	foa.
Arrowroot ..	mara.	Breakfast ..	amahao.
Egg	kalafi (kalodi).	Dinner	omoe.
Kitchen	kohea.	Feast	katoaga.
Fire	rahi.	Tobacco	rau.
Fire friction ..	sia.	Pudding ..	feki.
Oven	nujkoua.		

Zoological. (7.)

English.	Rotuman.	English.	Rotuman.
Shell	tetaikai.	Rat	pija.
Bat	hufhuf.	Snake	alete.
Pigeon	ifa.	Shark	tanifa (ioro).
Worm	keremutu.	Crab, sea ..	kaka.
Scorpion	mamasse, monpuoga.	Crab, land ..	fupa.
Spider	matavoao.	Crab, cocoanut ..	aruru.
Centipede ..	saaraara.		

The Canoe. (8.)

English.	Rotuman.	English.	Rotuman.
Canoe, double ..	ahoie, te bau rua.	Paddle	hosi.
Canoe, single, big ..	tafaga (vaka).	Mast	pou.
Canoe, single, small ..	tavane.	Outrigger ..	sama.
Boat	taurani.	Steering paddle	usuli.

Implements. (9.)

English.	Rotuman.	English.	Rotuman.
Axe	ia.	Woman's dress..	uha.
Club	oipeluga (aihi).	Whale's tooth ..	lei ala ne tolo.
Lamp	pulolo.	Eyeshade ..	isou.
Digging stick ..	isoa.	Broom	touferi.
Basket	aga.	Torch	sulu.
Mat	epa (apei).	Arrow	hofakbol.
Sinnet	unu.	Hat	foperu.
Cord	alolo.	Net	you.
Pillow	kuruga.	Pearl shell ..	tiaf hapa.
Oil (for body) ..	takai lolo.	Necklace ..	tifui.
Fish-hook ..	avai.	Sword	oifopilte.
Fan	siva.	Drum	oie.
Man's dress ..	taktakoi.	Fighting stick ..	oku.

Salutations. (10.)

English.	Rotuman.	English.	Rotuman.
On leaving ..	fuu.	Good-day ..	noaia.
Having left ..	lao.	Good-night ..	mose.
Good-morning ..	mamafa.		

Miscellaneous. (11.)

English.	Rotuman.	English.	Rotuman.
Heaven	limari (oroit').	Priest	apioiitu.
Chieftain . ..	gagaja.	Play, to	manea.
House	ri.	War	pelu.
Village	hanua noho (estu).	Taboo	fonou, ha.
Tribe	hoga, hoaga.	Good	lailai.
Sing, to	maka.	Bad	raksa.
Grave	tamura.	Love, to.. ..	hanisi (varvar).
Bury, to	famua.	Serve, to ..	asoa.
Go, to	lao.	Foreign	furcu.
Circumcision ..	kali.	White	fiso.

JANUARY 11TH, 1893.

E. W. BRABROOK, Esq., C.B., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

Mr. DALTON read Mr. E. B. LANDIS' paper on "The Capping Ceremony of Korea."

The PRESIDENT pointed out the importance attaching to the custom, and was supported by Mr. GOWLAND, who having lived in the country, was able to confirm the account. Discussion was carried on by Mr. MARKOFF, Professor TYLOR, Mr. A. L. LEWIS, Mr. RUPERT JONES and Mr. CROOKE, after which a cordial vote of thanks to the author was passed.

The PRESIDENT announced the election of Professor G. M. DAWSON, of Toronto; Professor SERGI, of Rome; and Signor TRONCOSO, of Mexico.

Mr. LEWIS then read Mr. R. H. MATHEWS' paper on "The ock Paintings and Carvings of the Australian Aborigines. Part II," and the PRESIDENT, in moving a vote of thanks, pointed out the great accuracy that distinguished Mr. MATHEWS' work.

Mr. A. J. EVANS spoke of similar caves having been found in Northern Italy.

The CAPPING CEREMONY *of* KOREA. By E. B. LANDIS, M.D. Third Division, First Class, Order of the Double Dragon.

ALMOST all nations, from the earliest times until now, have had certain rites which were performed at that period of life known as puberty.

The ritualists of Korea lay down the rule that males should be betrothed at from fifteen to twenty years of age. Now, in Korea it will be remembered that the Capping Ceremony and betrothal are synonymous terms, and the one necessarily presupposes the other as amongst the semitic nations of earlier times circumcision implied marriage. Sa Ma, Duke of On, taught that in ancient times males were betrothed at the age of twenty years, and this ceremony implied that the full responsibilities of manhood were now assumed. Later genera-

tions, departing from these ancient customs, were betrothed earlier in life, until now the Capping Ceremony is sometimes performed at the age of ten. This, however, is quite contrary to the teaching of the rigid ceremonialists who hold that a boy is not fit to assume the responsibilities of manhood until he is acquainted with Ritual and Ceremonial Law.

Three days before the ceremony takes place the head of the clan must make an announcement of the approaching ceremony to the spirit tablets in the ancestral temple. In ancient times a day for making this announcement was always chosen by divination, but at present this rule is not followed unless the Capping Ceremony takes place during the first month of the year. This announcement is made because a boy when capped is supposed to add a new link to the chain in the line of descent. It will be remembered that any unusual occurrence is always announced to the spirit tablets in the Ancestral Temple.

In ancient times the tutor, who occupies a prominent place in the performance of this ceremony, was chosen by lot. This rule is not now followed, and one of the friends of the family is chosen instead. He must be good and virtuous and well versed in Ceremonial Law.

The apartments in which the ceremony is to be performed are now prepared. By means of curtains and screens a small room is partitioned off, in the north-eastern part of the Ceremonial Hall. The Ceremonial Hall is one of the large rooms of the house in which all the ceremonies of the family and the clan are performed. If there are no steps leading up to this hall, a drawing is made on the ground to represent steps. Mats are spread out and a basin with towels are placed in a small side room to the East. In the North and South small apartments are also partitioned off.

Early on the morrow the people of the house arise early and get ready the articles enumerated below.

1. Three tables.

2. A black cap. This is made of thick paper and the pieces pasted together after being cut out of a single sheet. In the centre of each end, about half a inch above the band, a hole is pierced for the insertion of the pin. The whole cap is covered with a black material or with black paint.

3. A pin. This is used to stick through the cap. It should be made of ivory, bone or some other white material.

4. A hood. This is placed over the black cap. The hood and the plaited dress (5) are always worn together. It may be made from a piece of black silk or satin.

5. The plaited dress. A dress made of fine white grass

cloth, with a plaited skirt reaching to the heels. The skirt consists of twelve pieces neatly sewn together, and is attached to the jacket in such a manner that the bottom forms a perfect circle. This, Korean ritualists say, refers to the *sun's* orbit, and the twelve pieces of cloth which form the skirt represent the twelve months of the year, the four pieces of which the jacket is made representing the four seasons.

6. A great belt which is always worn with the above garment. It is made of white satin, folded and sewn so that the actual width of the belt is 2 inches. It must be sufficiently long, so that after encircling the waist and being tied in two loops in front, the two ends will reach down as low as the hem of the plaited dress. The edges on both sides are bound with black satin.

7. The cord is fastened to the great belt and may be made from material of any one of the five colours.

8. Black silk or cloth shoes with white laces.

9. The *Mo* cap. Of this cap there are two kinds, a large one which resembles the hat now commonly worn, and a smaller one of gauze. The small one resembles the military cap of the Chow dynasty of China with this addition, that along the seams are loops of jade beads.

10. The black shirt resembles a black jacket. It is now often made of an azure material.

11. A leathern belt which is always worn with the black shirt.

12. Embroidered shoes.

13. The cowl is like the hood usually worn by graduates who have been successful in the examinations.

14. The graduate's gown is made of indigo or jade-coloured silk. It should have a collar of blue-black silk.

15. A belt which is worn with the graduate's gown. It is sometimes called the "Tasselated Belt" or the "Bell Belt." It is made of woven silk and encircles the waist twice, and at the place where it is fastened two bells are usually attached. Lower down the two ends are again fastened and a larger bell or tassel attached.

16. Boots.

17. A comb in a case. This is for combing the hair before it is fastened up.

18. A *Yang*. This somewhat resembles the ordinary head-band. It is made from hair obtained from a horse's mane and is used to enclose the hair.

19. Three trays covered with cloth. It is on these that all the above articles of dress are arranged.

20. Dried meats and pickled meats.

21. Horn spoons.

The head of the clan with other members of the family and people concerned will arrange themselves in proper order according to their rank and relationship. Those who take part in the ceremony wear full ceremonial dress, the others their holiday clothes.

The boy to be capped has his hair tied up in two coils, and wears a dress resembling the holiday attire of boys.

A prompter for the boy and an assistant for the tutor having been chosen from among the relatives, they retire to the outer gate and are escorted back to the hall by the head of the clan with many ceremonial prostrations.

The boy is placed in the centre of the room and faces the south. The tutor occupies a position on his right and faces the east. The assistant takes a comb and combs the boy's hair, and uniting the two coils into one makes a top-knot and puts on the head-band (No. 18). The cap is then handed to the tutor, who slowly advances to where the boy is and, facing him, he hands the cap to the assistant. He then solemnly blesses the boy for the first time thus:

"In this fortunate moon and on this lucky day an addition is made to your dress. You must now discard all childish thoughts and obey, so that you may attain perfect virtue. May you live long and attain much happiness by the aid of this blessing."

The tutor then kneels while the assistant fastens the pin in the cap. The assistant then advances and kneeling hands the cap to the tutor, who receives it and places it on the boy's head whilst the assistant ties on the belt.

The capped boy now attires himself in the plaited skirt, the large belt with tassels and the laced shoes. He stands erect for a short time and with a dignified countenance faces the south.

The second blessing now follows, after which the boy is attired in the black shirt, the leathern belt and the embroidered shoes.

The second blessing:

"In this fortunate moon and at this good time you are attired in other garments. You must be careful of your demeanour that it be grave, and of your heart that it be pure and sincere. May you live long and receive many blessings from the gods."

The Secretary now advances with the cap, and the tutor kneeling places it on the boy's head as before. The capped boy rises, takes off his plaited dress and puts on his black shirt and leathern belt.

The third blessing now follows, after which the cowl, the graduate's gown, and the boots are worn. This ceremony is similar to the previous one.

The third blessing:

"During this good year and in this lucky moon, you have added to your attire, in the presence of all your brothers, all that which is worn by adults. May your virtues reach perfection, and may you attain that golden (lit. yellow) age which has no limit, and receive many blessings from Heaven."

The tutor kneeling places the cowl on the boy's head. The capped boy then takes off the black shirt and putting on the graduate's gown, leathern belt and boots, and retires.

Libations are now poured in the next room. The capped boy facing the north invokes the gods as follows:

"Good wine, pure and fragrant, is now offered to you with prostrations. Accept these our offerings for your benefit. Grant to us the excellencies of Heaven, not forgetting as well to grant us long life."

Then having received a cup of wine and a tray of dried and pickled meats from the assistant, he pours out libations three times, slightly inclining his head whilst doing so.

In order to obtain the greatest efficacy from these libations, a room should be made (with the aid of screens) in the courtyard, and the libations should be poured on the earth.

The tutor now gives a new name to the capped boy by which he is hereafter known, the name which he bore during his infancy and childhood being discarded.

The tutor gives him a new name, thus:

"You, the eldest (or second or third son as the case may be, (name given) having completed the rites on the attainment of manhood, on this lucky day of this fortunate moon, I give you an excellent name. May you make that name distinguished and virtuous and live long to enjoy it."

The capped boy then answers, "Although I am far from bright intellectually, yet I dare not but receive this name with reverence, and early and late regard it with respect."

The capped boy then prostrates himself.

The tutor now takes his farewell.

The head of the clan, accompanied by the capped boy, now pays a visit to the ancestral temple. The announcement in the ancestral temple is similar to that made when a son is born.

The capped boy now pays his respects to his seniors.

A festival is held on a subsequent day or days at which libations are poured, and all who took part in capping rites have their healths drunk with much ceremony, and receive presents of linen, silk, and paper.

Girls go through a ceremony also, which in many respects resembles the Capping Ceremony, and which is called "The Tying up of the Hair." This is done when a girl reaches the age of fifteen, even though she is not betrothed. If, however, she is not betrothed she only wears it done up on festival occasions, on ordinary days wearing it plaited as usual. After a girl is betrothed she never wears her hair plaited.

The mother takes the place which is taken by the head of the clan in the case of boys.

Three days before the ceremony a governess is chosen from amongst the female relatives of the family. She must be good and honest, and possess a certain knowledge of rites and ceremonies. She must of course be a married woman.

If the girl is betrothed, the mother invites one of the female relatives of the husband to assist in doing up the hair. But if the girl is not promised in marriage a relative of her own household acts.

Preparations are now made as in the Ceremony of Capping, mats being spread in the inner apartments for the sisters and female relations of the girl. Early in the morning of the day set apart for the ceremony, the following clothing is prepared:

1. A jacket, which with the comb and wine cups is placed in the middle of the room as in the Capping Ceremony.

2. A cap and hair-pin. These are placed on a tray at the bottom of the western steps, and are in charge of an attendant.

3. The bride's coronet. This is also called the "Phœnix Cap" or "Glorious Cap." With it is placed a pin.

4. A band or net for enclosing the hair. It is made of black silk 6 feet in length folded, and reaches from the nape of the neck over the head to the forehead, where it is turned and tied around the head. In ancient times both men and women wore this, but now it is only worn by the women, the men having discarded it for the horsehair band.

5. A long mantle which is made of silk or satin and reaches as far as the trousers. The collar is cut round. It is sometimes made so as to cover only half of the shoulders, and is sleeveless. The sleeved jacket reaches as far as the knees.

The mother, governess and girl all face the south; the first two are of course in holiday attire.

The mother goes out to meet the governess and escorts her into the house, but as it is not customary for women in Korea to leave the house she need go no farther than the outer gate. The mother enters by the eastern steps and the governess by the western steps, whereupon all the guests go to their proper places. The mother takes up her position in the east, the

governess in the west, and the attendant to the east of the eastern steps. They all face the south.

Just before the hair is done up the governess retires from the room and dresses the girl in the sleeveless jacket. After she returns to the room, the attendant takes the comb and goes to the left side of the mat followed by the governess, leading the girl. The girl now leaves the mat and kneels facing the west, while the assistant loosens the hair and combs it, after which it is again tied together. The governess and mother then descend the stairs and wash their hands, after which the mother requests the governess to return to her mat. The attendant then brings in the coronet and the pin on a tray, whilst the governess advances to where the girl is kneeling and blesses her in precisely the same words as are used for the first blessing in the case of boys. The governess kneels and places the coronet on the girl's head, fastening it with a pin, after which she rises and returns to her mat. The girl also rises and retires to the next room, where she removes the sleeveless jacket for the sleeved one. She now returns to the room and libations are poured. The attendant pours out wine and takes her position to the left of the girl. The governess bows while the girl goes to the right of the mat and stands facing the south. The governess now takes the wine and advancing to the mat where libations are to be poured, repeats the same invocation as in the case of the Capping Ceremony. The girl now prostrates herself four times and the governess once, after which the girl takes the wine and kneeling pours out libations, drinking the remainder. She then rises and again prostrates herself four times.

A name is now given to the girl. The mother and governess together descend the steps, the mother on the east and the governess on the west. The girl descends by the western steps and going a little to the east of them, stands facing the south. The governess goes through the same ceremony as takes places in boys, after which the girl prostrates herself four times and retires. The mother and girl now go to the ancestral temple and announce the completion of the ceremony to the spirit tablets. The announcement reads thus:

"— (Name) — (No. of daughter, whether eldest, second, third, etc.), has to-day had her hair done up, and we therefore beg to present her in the ancestral temple."

The governess is now formally thanked, her health is drunk, and presents are given to her. This is all similar to the ceremony described above in the case of boys.

The Rock Paintings *and* Carvings *of the* Australian Aborigines. (Part II.) By R. H. Mathews, Licensed Surveyor, N.S.W.

[with plates xxix, xxx.]

In 1895 I contributed a paper under the above title to this Institute,[1] describing the way in which the different styles of paintings and carvings are produced by the native artists, and stating their wide geographic range in Australia, with some remarks on their probable age and meaning.

In the following pages it will not be necessary for me to again refer to these parts of the subject, therefore I will at once proceed to describe a large number of aboriginal drawings which I have myself copied from the rocks on which they were found. All the paintings and carvings included in this article are in New South Wales, and unless otherwise stated, are in the County of Cumberland. The plate containing the paintings will be first dealt with, and then will follow a description of the plate illustrating the carvings. All the paintings are shown in their correct relative positions exactly as they appear on the walls of the several caves described. In the plate of the carvings Figs. 1 to 6, and 7 to 9 represent groups in their proper relative positions, but the remainder of the carvings, numbers 10 to 28, the figures from different rocks, are fitted on the plate in convenient spaces.

Plate XXIX.—Rock Paintings.

Fig. 1. This rock-shelter is in an escarpment of Hawkesbury sandstone skirting the shore of Red Hand, or Quaker's Hat Bay, an inlet of Long Bay, one of the branches of Middle Harbour, Port Jackson, in the Parish of Willoughby, County of Cumberland. It is about 15 feet above high water, and about 30 feet back from the shore, and faces south-west. Its length is 33 feet, its depth on the average about 7 feet 6 inches, and the height varies from 3 feet 5 inches at the entrance to 5 feet 3 inches inside. The floor is sandstone, and there are signs of smoke on the roof and walls, which leads to the conclusion that the place has been resided in by the aborigines.

On entering the shelter, to the left of the spectator, is a human figure scratched on the cave wall, the scratching not being deep, but quite sufficient to remain a long time in a spot

[1] "Journ. Anthrop. Inst.," xxv, 145–163, Plates XIV, XV, XVI.

Fig 1

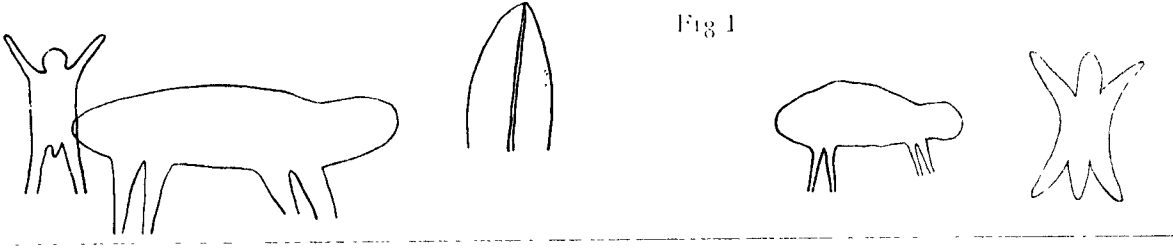


Fig 2

Fig 3



Fig.4

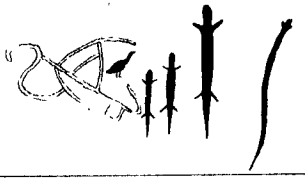
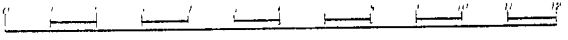


Fig 5.

Fig 6



Scale of Feet





R H Mathews del.

Journal of the Anthropological Institute, Vol. XXVII, Plate XXIX.

protected from the weather. Next to this figure is the representation of some nondescript animal over 7 feet long, perhaps intended for a wombat, outlined in black. Farther to the right is part of a shield carved on the back wall of the cave; the lower end has been carried away by the natural wasting of the rock, but the middle is still fairly well defined, and the upper end is traceable. This is interesting, being the only case in which I have found carving within a cave. There are remains of a few other groovings on the right of the shield, but they are too far wasted away by the weather for anything to be made of them. There is another but smaller figure of what I have said may be intended for a wombat. The next and last object is one of those grotesque human figures so commonly found in caves all over the country, this one being coloured red.[1]

There are about fourteen hands in white stencilling faintly traceable on the wall, extending from the first human figure to the second nondescript animal, but as I have delineated so many hands which are clear and well defined, I have not reproduced these on the plate, with the exception of one of the plainest of them, which is stencilled upon the shield.

This shelter is composed of a softer kind of sandstone than most of them, and the interior is suffering from the wasting influences of damp and rain.

The chief interest of this cave is the carved shield within it, and the two animals of doubtful identity. If they do not represent the wombat or the native bear—the former of which has a very short tail, and the latter none—they may be intended for some mythologic creature of aboriginal lore.

Fig. 2. This rock shelter is situated on the left bank of the Hawkesbury River, at the lower end of Sackville reach, about 5 chains below the punt which crosses the river, and is within Portion No. 3, of 200 acres, in the Parish of Wilberforce, County of Cook. The shelter is hollowed, partly by fluviatile action, partly by atmospheric influences, out of a bluff escarpment of Hawkesbury sandstone which approaches close to the river bank at this spot. The cave faces N. 30° E., the height being about 11 feet, the depth running back 18 feet, and the length 26 feet. The floor, for the first 10 feet outwards from the back wall consists of the rock out of which the cave has been worn, and the remainder comprises soil and hearth rubbish. The roof is much blackened and

[1] In 1893, four years ago, I contributed a paper to the Royal Society of New South Wales, in which I described a gigantic painting of a man on the wall of a cave, executed in red and white colours. "Journ. Roy. Soc. N.S. Wales," xxvii, 353–358, Plate XIX.

begrimed with the soot of camp fires; and judging from this, and the accumulation of ashes on the floor, this shelter has probably been the haunt of the aborigines for several generations.

The paintings in this cave consist of forty-two hands, and one boomerang, all done in the white-stencil method. The hands are represented in the usual way, with the palms pressed against the surface of the rock; there being thirty-seven left hands, and five right hands. Some of the drawings are very plain, but in general they are rather faint, leading one to the conclusion that they are of considerable age. These paintings have been known to the farmers on the Hawkesbury River for about half a century, and have not altered much in appearance in that time. The back wall of the shelter, on which the hands are delineated, is somewhat circular at the end on the right of the spectator, but I have assumed it to be a flat surface to enable me to show all the figures.

Fig. 3. This cave is situated in a low escarpment of Hawkesbury sandstone skirting a rocky range, and is about 3½ chains from the right bank of Wattle Creek, a tributary of Wilpinjong Creek, about three-quarters of a mile in a north-easterly direction from the north-east corner of Portion No. 31 of 40 acres, Parish of Wilpinjong, County of Phillip.

The cave is 34 feet long, 31 feet deep, and 10 feet high inside. The height on the left side at the entrance is about the same, but at the right side the rock hangs over, making that part of the roof immediately behind it of a domed shape, and causing the entrance at that place to be only about 5½ feet high. It is on this part of the entrance that the paintings appear, being protected from the weather by a large mass of projecting rock a short distance above them. The cave faces south, and is about 50 or 60 feet above the level of Wattle Creek, in which the water is permanent, except in a dry season.

There are nine hands in a perfect state of preservation, all executed in red stencil; two of these hands, a left and a right, have the thumbs touching. Below these are two smaller hands, like those of a woman or a youth. On the extreme right there are the remains of three other hands, also in red stencil, which have been partially obliterated in consequence of the rains beating slightly on that part of the rock during stormy weather, causing the stone to fret away.

Of the twelve hands and parts of hands in this cave, eight are left hands, three right hands, and one is too far wasted away by the weather to be distinguishable. There are no appearances about this cave which would lead one to think it had ever

been used by the aborigines as a place of residence, except for very short periods, if at all.

Fig. 4. This shelter is situated in a high escarpment of Hawkesbury sandstone about 2½ chains from the left bank of Back Gully, and about 8 chains up that gully from where it is crossed by the western boundary of Portion No. 42 of 120 acres, in the Parish of Tollagong, County of Hunter. Water remains in Back Gully during the winter months, and in wet weather, but in Putty Creek, which is only about a mile distant, water is permanent in the driest seasons.

The shelter is 44 feet long, from 5 to 8 feet high, 23 feet deep, and faces S., 50° E. The floor consists of soil and hearth rubbish, and the roof is blackened with smoke, showing that the shelter has been used for residential purposes by the blacks.

The Fig. shows a design in black and red, similar in character to some which I have observed in other caves. There are two left hands executed in the white stencil method—three iguanas or lizards, a bird, and what appears to be intended to represent an eel, all drawn in black.

On another part of the wall I observed eighteen representations of hands, all done in white stencil, but I did not copy them, thinking that this reference to them would be a sufficient guide to future visitors.

There are two other groups of interesting paintings in this cave, one of which I have described in the "Proceedings of the Royal Society of Victoria," vii, N.S., pp. 143–156, Plate VIII., Fig. 6; the other is described in the "Proceedings of the Royal Geographical Society of Australasia, Queensland Branch," x, pp. 46–70, Plate II, Fig. 2.

Fig. 5. This rock shelter is in an escarpment of Hawkesbury sandstone on a spur of a rocky range on the left of the road from Howe's Valley to Putty, about 6 chains from that road, and about 10 chains southerly from the south-eastern corner of Portion No. 217 of 40 acres in the Parish of Wareng, County of Hunter. The shelter faces N., 25° W., and is 31 feet long, and 6 feet high; the depth from the front to the back averaging 14 feet. The floor consists of rock in places, and soil in others, and has been resided in occasionally, judging by the charcoal on the floor and smoke on the roof. There is water in a gully not more than a quarter of a mile distant.

This cave is unusually interesting on account of there being the perfect representations of two human feet, one of which is smaller than the other, both being the left. There are also eight hands, and the remains of a ninth, three of them representing right hands. Most of the figures in this cave are rather

faint, owing to the wasting away of the rock, which is of a somewhat soft and gritty nature. All the figures are executed in white stencil.

Fig. 6. The cave in which these impressed hands are found is situated in the Parish of Wilpinjong, County of Phillip, in a sandstone escarpment about three-quarters of a mile in a southerly direction from Portion No. 4 of 40 acres, in the parish above-named. The length of the shelter is 54 feet, the depth 13 feet, and the height about 9 or 10 feet, and it faces the north-east. The floor consists of sandstone, and there are no indications of the cave having been used for residential purposes.

On the left of the spectator as he enters the cave are nine hands, all done in the impression method. Under the eighth hand of this group is what appears to be intended for the track of a bird's foot. Next follows about 18 feet of rough rock altogether unsuitable for painting, and then, on a smooth patch of the sandstone, are five more impressed hands. On the plate, the 18 feet of space separating these two groups of hands, has been utilised for the insertion of the scale of the drawings. The impressions appear to have been made by the hands of women or youths, judging by their small size, and are all in red colour.

This cave contains another group of twenty-five impressed hands, which are shown as Fig. 6, Plate II, illustrating my paper on "The Aboriginal Rock Pictures of Australia," published in the "Proceedings of the Royal Geographical Society of Australasia, Queensland Branch," vol. x, pp. 46–70.

PLATE XXX.—ROCK CARVINGS.

Figs. 1 to 6 represent an interesting group of six fish carved on a rock of Hawkesbury sandstone on the Battery Reserve at Bumborah Point, Parish of Botany, County of Cumberland. The rock is almost level with the surface of the ground, and slopes in the same direction, which is towards the shore of Botany Bay. All the figures have suffered by the wasting of the rock, and the greater part of their outline is now barely distinguishable.

The large fish, Fig. 1, is 14 feet 10 inches from the snout to the farthest flipper of the tail, which is fairly well shaped. An eye is shown, and the mouth is partly open. Within the outline are two smaller fish, Figs. 2 and 3, the former of which is 6 feet 2 inches long, and the latter 2 feet 6 inches. An incised line, over 7 feet in length, which was probably intended for a spear, is inserted in the fore part of the body of Fig. 2, having passed through the dorsal outline of Fig. 1. Whether the

Scale of Figs 7 & 9
R. H. Mathews del.
Scale of Figs 1 to 6 & Nos 28

drawing was intended to convey the meaning that these two fish had been eaten by the larger one, or whether they were carved in this position owing to the suitability of the rock surface, it is difficult to determine.

Fig. 4, the largest fish of this group, is 15 feet 8 inches in length, and is delineated with the mouth open. Fig. 5 is another large fish, whose outline encroaches on that of Fig. 4, and also has its mouth open. The short line rising from its back is suggestive of the commencement of a dorsal fin, which the native artist either left unfinished, or the remainder has weathered away. Lying wholly within the outline of Fig. 4, and partly overlapping that of Fig. 5, is a small fish 2 feet long, very badly drawn.

Figs. 7, 8, and 9. This group of carvings is situated on top of a large rock of Hawkesbury sandstone a few yards from the northern side of the road from Gordon railway station to Pittwatu, and is within Portion No. 83 of 320 acres, in the Parish of Narrabeen, County of Cumberland. The large fish, Fig. 7, which is 42½ feet in length, and upwards of 12 feet across the body, has been described by me elsewhere,[1] and is not repeated to complete the group, the remaining figures of which were not then dealt with. The part of a man's outline, Fig. 8, close to the mouth of the fish, was either never completed, or some of the lines have been carried away by the weathering of the rock. Fig. 9 represents a man 5 feet 8 inches tall, having in his left hand a weapon which resembles a tomahawk or waddy. The lump under this man's arm may have been designed for a dilly bag, or perhaps the artist first intended the drawing to represent a woman, and changed his mind as the work progressed.

The theory may be hazarded that this group referred to some well known legend in which the great fish was going to kill the black fellow shown in Fig. 8, and that then the other man, Fig. 9, came to his assistance, and hit the fish with his tomahawk.[2] On the other hand, the position may be purely accidental, the figures having been executed by different artists, perhaps at different times, on such parts of the surface of the rock as were found suitable for the purpose.

Fig. 10 is carved on the level surface of a sandstone rock on

[1] "Aboriginal Rock Paintings and Carvings in New South Wales," "Proc. Roy. Soc. Victoria," vii (new series), 143–156, Plate IX, Fig. 14.

[2] I know of another group of carvings, in which a monstrous fish, with its jaws extended, is apparently pursuing a man in front of it. The large fish is shown as Fig. 7, Plate XVI, in the "Journ. Anthrop. Inst.," vol. xxv; and the man it is pursuing, together with two enormous boomerangs which have perhaps been thrown at the fish in endeavouring to rescue the man, are represented in Figs. 7, 32, 33, Plate II, in the "American Anthropologist," vol. viii.

the eastern side of the old road from Peat's Ferry to Sydney, and about a quarter of a mile northerly from Vize Trigonometrical Station, Parish of Cowan. It represents a fish 5 feet 1 inch long, and is remarkable on account of the belly fins being in pairs,—native carvings generally showing only one. The mouth is represented, and both the eyes are drawn on the same side of the head, a practice not unusual in aboriginal pictures of various animals.

Within a few chains of this figure, and on a continuation of the same mass of Hawkesbury sandstone, are a considerable number of other carvings representing men, kangaroos, fish, etc., some of which have been reproduced by me in other publications.[1]

Figs. 11 and 12. The large fish represented in Fig. 11 measures nearly 22 feet from the snout to the end of the upper caudal fin, and the eye is tolerably well placed. There are two dorsal and two ventral fins almost opposite each other and an incised line across the tail. Within the outline of the fish, and lying parallel with it, is the rude figure of a man, Fig. 12, with his head in the same direction as that of the fish, which faces towards Berry's Bay. In regard to the upper extremity of the human figure, it is rather puzzling to say whether the artist intended to give him the head of a bird, or that of some of the marsupial tribe. The rest of the drawing, including the belt, is similar to other carvings of men found in different places. The mass of sandstone containing this group is on top of the hill at the head of Berry's Bay, one of the inlets of Port Jackson, in the Parish of Alexandria.[2]

Fig. 13. This carving, representing a fish 2 feet 8 inches long, is cut on a large sandstone rock sloping north-easterly within Portion No. 1139, of 24½ acres, in the Parish of Manly Cove. On the same rock are upwards of thirty other carvings representing women, men, fish, kangaroos, wombats, native weapons, and several nondescript figures, all of which have been reproduced by me in different publications.[3]

Fig. 14, representing a fish 6 feet 3 inches in length and 2 feet 6 inches across the widest part of the body, is carved on a mass of Hawkesbury sandstone on the old disused drag road from Portion No. 71, of 100 acres, Parish of Broken Bay,

[1] "Rock Paintings and Carvings of the Aborigines of N.S. Wales," "Report Austr. Assoc. Adv. Sci.," vi, pp. 624–637, Plate XCIX, Figs. 4 and 28.

[2] A very rough sketch of a fish, somewhat resembling this one, but stated to be "about 12 feet long," is given in the "Proc. Geo. Soc. Austr., N.S. Wales," vol. i, p. 50.

[3] "The Aboriginal Rock Pictures of Australia," "Proc. Roy. Geog. Soc. Aust. (Q.)," x, 46–70, Plate III, Figs. 8, 10, 14 and 16. See also my other papers cited in the footnotes to this article.

towards Taber Trigonometrical Station. The rock slopes gently in a north-easterly direction, and the carving is indistinct owing to weathering.

Fig. 15. This well executed representation of a buck kangaroo is carved on a sandstone rock at Point Piper, a low headland on the southern side of Port Jackson, between Rose Bay and Double Bay, in the parish of Alexandria. The extreme length, from the nose to the tip of the tail, is 10 feet 5 inches; both the fore legs are represented, but only three digits are shown on each, instead of five. In 1847, Mr. G. F. Angas,[1] in a book long since out of print, gave an inaccurate drawing of this kangaroo, which he described as being "nearly 9 feet in length." His drawing is nevertheless highly interesting as showing that although the carving has been exposed to the weather, and other wasting influences, for more than fifty years since its first discovery, it is still in an excellent state of preservation.

Fig. 16. This strange looking fish, 5 feet 4 inches long, is delineated on a flat mass of Hawkesbury sandstone almost level with the surface of the ground, and more than an acre in extent, about 5 chains from the eastern side of the old road from Peat's Ferry to Sydney, and about a mile and a quarter northerly from Vize Trigonometrical Station, parish of Cowan. There are two large fins, each of which has a line across it, and the tail is scolloped into three divisions. The mouth is represented open, but the eye has either been forgotten, or has been carried away by the natural decay of the rock. There are about two dozen other carvings on the same rock, most of which have been copied by me, and are shown in the Journals of different Societies.[2]

Fig. 17. This interesting drawing is evidently intended to represent a fish caught on a line. Collins, in his "Account of the English Colony in New South Wales," vol. i, p. 557, speaks of the natives fishing with hooks made of oyster-shell, and fishing lines made from the bark of a tree. The fish is 2 feet 9 inches long, and the length of the string is nearly 6 feet. It is on the same mass of rock as Fig. 13.

Fig. 18. This large female kangaroo is carved on a continuation of the same mass of rock as Fig. 10, not far from it, on the opposite or western side of the old road to Peat's Ferry, and on top of the range dividing the waters of Berowra and Cowan Creeks. The animal measures 12 feet 10 inches,

[1] "Savage Life in Australia and New Zealand" (London, 1847), vol. ii, p. 275, Plate I, Fig. 11.

[2] "The Rock Pictures of the Australian Aborigines," "Proc. Roy. Geog. Soc. Aust. (Q.)," xi, 86–105, Plate II, Figs. 10, 11, 12.

from the tip of the nose to the end of the tail, and both eyes are represented on the same side of the head, as in the case of the fish shown in Fig. 10.

Fig. 19. The small figure of a man here represented is carved on a mass of Hawkesbury sandstone, sloping gently towards the south-east, about two acres in extent, and elevated only a few feet above the surrounding land, in the Parish of Spencer, County of Northumberland. The rock is situated on a bridle track leading from Hawkesbury River to Mangrove Creek, on top of the range dividing the streams mentioned. The man's height is 4 feet 5 inches and the width of the body, which is much elongated, is 10 inches. There are two incised lines across the body, representing the belt, which is usually shown by a single line, and the only features delineated are the eyes.

Fig. 20 represents a man, measuring 4 feet 3 inches from the top of his head to the heel of his longest leg, the legs being of unequal length. This rude drawing is on the same rock as Fig. 19. There are about thirty other carvings on this rock, nearly all of which have been shown by me elsewhere.[1]

Fig. 21. This drawing of a man about 4 feet 6 inches high if his legs were not so much spread out, is carved on a flat sandstone rock within the north-west corner of portion No. 16, of 60 acres, in the parish of Wilberforce, County of Cook. The eyes are the only features at present visible on the face, and there is a belt round the waist, and bands across each of the arms near the shoulders. All the groovings are very faint, owing to the wasting of the rock, and are scarcely discernible.

Fig. 22. This drawing, which is rather too much bent for a boomerang, may have been intended to represent the new moon. It is carved on a large flat rock about half-a-mile north from Cooper Trigonometrical Station, in the Parish of Frederick. It measures 26 inches in a direct line from end to end, and is 5 inches wide in the middle. Several other interesting figures are carved upon the same mass of rock, and are described in papers contributed by me to other scientific bodies.[2]

Fig. 23 is a grotesque figure of a man measuring 15 feet from the top of his head-dress to a point on a level with his heels as he now stands; but would be about 2 feet higher if his legs were straight under the body. The belt across the body consists of two lines, as in Fig. 19, two bands on the left arm, and

[1] "The Rock Paintings and Carvings of the Australian Aborigines," "Journ. Anthrop. Inst.," xxv, 145–163, Plate XVI, Figs. 2, 3 and 6. "Australian Rock Pictures," "American Anthropologist," viii, 268–278, Plate II, numerous figures. The remainder are shown in other publications.

[2] "Journ. Anthrop. Inst.," xxv, Plate XVI, Figs. 1, 4, 5, 8. "Proc. Roy. Geog. Soc. Aust. (Q.)," x, Plate III, Figs. 1, 3, 4, 13. "Rept. Aust. Assoc. Adv. Sci.," vi, Plate XCIX, Figs. 19, 20.

one on the right; there is also a band around each ankle,[1] and another across the right foot. Both eyes are shown, and the fingers and toes are represented. The lines extending from the chest to the abdomen were probably intended for ornamentation, but may have been drawn to represent the alimentary system. I have before seen nondescript figures carved within the outline of larger ones in other instances.[2]

This carving is on a flat rock of Hawkesbury sandstone, almost level with the ground, a few yards from the south-western side of the road leading up the "Wheelbarrow Ridge" from the Colo River, and is about 2½ miles northerly from Portion No. 21, of 100 acres, in the parish of Hawkesbury, County of Hunter. There are a few small carvings on the same rock which are too much defaced by time to be distinguishable.

Figs. 24 to 28, all representing grotesque figures in human form, are carved on a rounded mass of Hawkesbury sandstone. rising some feet above the surface of the ground, on the eastern side of the main road from Dural to Wiseman's Ferry, and are situated about 2 or 3 miles southerly from the crossing of that road over Cooper's Creek, in the Parish of Frederick. The carvings here shown are the most important, but there are a few other small figures, almost obliterated by the decay of the rock, which I have not reproduced.

Fig. 24 represents a man 5 feet 9 inches high, exclusive of his headgear, which measures an additional 6 inches. Fig. 25 is another male figure, 5 feet 2 inches high, without reckoning the head-dress. He wears a belt, and has one eye in the centre of the head. Fig. 26 appears to be the profile of a human being sitting down, with a boomerang 28 inches long near the back. Fig. 27 is another human figure, 7 feet 9 inches high, having three rows of dots extending from the chest to the abdomen Fig. 28, the last of the group, represents a man of colossal proportions, being 14 feet 4 inches high, and 29 inches across the body at the belt. The eyes and mouth are delineated, as in Figs. 24 and 27, and there are some lines within the body which have probably been added for decorative purposes These lines extend from the neck the whole length of the body, and some of them are continued down each leg, but as they are very faint, I have shown them only as far as the belt.

The following correction should be made in my former paper on this subject published in this Journal, vol. xxv, p. 158:—

Lines 9 and 10, for "No. 63 of 40 acres," read "No. 3, of 40½ acres."

[1] For bands around the ankles, see the two men in Fig. 3, Plate II, "Proc. Roy. Geog. Soc. Aust. (Q.)," xi.

[2] Compare with Fig. 7, Plate IX, "Proc. Roy. Soc. Victoria," vii (N.S.). See also Fig. 5, Plate XVI, "Journ. Anthrop. Inst.," xxv.

ANNUAL GENERAL MEETING.

JANUARY 25TH, 1898.

E. W. BRABROOK, Esq., C.B., F.S.A., *President, in the Chair.*

The Minutes of the last Meeting were read and signed.

The CHAIRMAN declared the ballot open, and appointed Mr. Bouverie Pusey, and Mr. W. H. Coffin, Scrutineers.

The Treasurer, Mr. A. L. LEWIS, read the following Report:—

TREASURER'S REPORT FOR 1897.

The income of the Institute for the year 1897 was £549 17*s.* 4*d.*, being £19 9*s.* 7*d.* more than the income for 1896; an increase which has been caused by our receiving two life subscriptions in 1897 as against one in 1896.

The expenditure for the year 1897 was £646 5*s.* 2*d.*, being £130 14*s.* 9*d* more than in 1896, and £96 7*s.* 10*d.* more than the income for 1897.

This excess of expenditure over income and over the expenditure of 1896 has arisen entirely in connection with the *Journal*, the 4 numbers paid for in 1897 having cost £325 1*s.* 9*d.*, as against £204 8*s.*, the cost of the 4 numbers paid for in 1896, and the cost of stamps and parcels having increased by £11 15*s.* 2*d.*, chiefly on account of the greater weight of the *Journals* sent out.

I have always considered and still maintain that our *Journal* is the best object upon which we can expend our funds, and I cannot doubt that the Fellows of the Institute will feel that they have had good value for the money spent during the last year, but it is obvious that we cannot this year spend as much as we spent last year without first enlarging our bank balance. It will therefore be for the Fellows, who have received the benefit of last year's extra expenditure, and for the Council about to be elected by them, to decide whether the present rate of publication shall be maintained, and, if so, whether the requisite means shall be provided by further subscriptions and donations, or by the sale of our Metropolitan Consolidated Stock.

The liabilities at the end of 1897 (other than our moral liability to life members) were :—

	£	*s.*	*d.*
Rent, &c., for one quarter	33	15	0
Journal, one number	97	1	3
"Anthropological Notes and Queries"	39	19	1
Sundries, say	14	4	8
Total	£185	0	0

The assets at the same date were £600 Metropolitan Consolidated Stock (worth about £720), cash in hand and at the Bankers £75 1*s.* 10*d.*, some unpaid subscriptions, and the library, furniture, and stock of publications.

A. L. LEWIS,
Treasurer.

ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.

Receipts and Payments for the Year 1897.

RECEIPTS.

	£	s.	d.	£	s.	d.
BALANCES 1st January, 1897:						
Cash at Bank	162	13	10			
„ Petty	5	2	1			
	167	15	11			
Less balance of "Notes and Queries" account	36	5	4			
				131	10	7
SUBSCRIPTIONS:						
For the year 1897	360	3	0			
Two Life Compositions	42	0	0			
Arrears	17	17	0			
In advance	11	9	0			
				431	9	0
SALE OF PUBLICATIONS:						
Messrs. Kegan Paul & Co. (July 1, 1896, to June 30, 1897)	82	12	8			
Office Sales	10	9	8			
				93	2	4
STONE IMPLEMENTS SOLD				5	0	0
DIVIDENDS for one year on Metropolitan Consolidated 3½ per cent. Stock (less Income Tax)				20	6	0
"ANTHROPOLOGICAL NOTES AND QUERIES":						
Balance as per last account	36	5	4			
Sales during 1897	3	13	9			
				39	19	1
				£721	7	0

PAYMENTS.

	£	s.	d.	£	s.	d.
RENT (including coal and gas), for one year to Michaelmas, 1897				135	0	0
PRINTING JOURNAL, Nos. 97, 98, 99 and 100, including illustrations and Authors' copies	329	11	9			
Less received from Miss Godden towards plates	4	10	0			
				325	1	9
SALARIES AND COLLECTOR'S COMMISSION				76	11	8
STAMPS AND PARCELS				42	11	6
HOUSE EXPENSES:						
Cleaning rooms, &c.	16	18	6			
Attendance and Refreshments at Meetings	22	15	0			
				39	13	6
PRINTING AND STATIONERY				18	17	11
LANTERN (use of slides)				4	3	0
INSURANCE				1	10	0
SUBSCRIPTION TO LIBRARY CONFERENCE				1	1	0
TRAVELLING					19	0
REPAIRS					15	10
				646	5	2
BALANCES, 31st December, 1897:						
Cash at Bank	71	18	4			
Petty Cash	3	3	6			
				75	1	10
				£721	7	0

Examined and found correct,

(Signed) ROBT. B. HOLT,
H. N. HUTCHINSON, } *Auditors.*

January 21st, 1898.

The Secretary, Mr. O. M. DALTON, read the following Report of the Council:—

REPORT OF THE COUNCIL OF THE ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND FOR THE YEAR 1897.

The Council has to report that during the past year eleven Ordinary Meetings and one special meeting have been held in addition to the Annual Meeting.

In the course of the year the following numbers of the *Journal* have been issued: Nos. 98, 99, 100, and 101, containing 614 pages of letterpress, and illustrated by 44 plates and a large number of woodcuts.

The Library is in full working order, many valuable additions having been made in the course of the year. The Catalogue has been kept up to date.

The classification of negatives and photographs, and the formation of a loan collection of Anthropological lantern slides for the use of Fellows was proceeded with.

In the following table the present state of the Institute, with respect to the number of its members, is compared with its condition at the corresponding period of last year:—

	Honorary.	Corresponding.	Compounders.	Ordinary.	Total.
January 1st, 1897	47	26	84	206	363
Since elected ..	3	1	2	7	..
Deceased or retired	2	..	4	6	..
January 1st, 1898	48	27	82	207	364

The following are the names of the Fellows whose deaths have been reported during the year:—

Prof. Leuckart, of Leipzig, Honorary Member.
Prof. Steenstrup, of Copenhagen, Corresponding Member; and,

Rev. Wm. Arthur.
Mr. J. S. Coleman.
Mr. S. Harraden.
Mr. S. Laing.
Mr. J. Theodore Bent.
Sir A. W. Franks, K.C.B.
Mr. J. Heywood.
Mr. A. Morrison.

The Reports were adopted on the motion of the PRESIDENT, seconded by Sir H. Low.

ANNIVERSARY ADDRESS.

By E. W. BRABROOK, *President.*

I HAVE now the honour, for the third and last time, of delivering the customary annual address from the chair. I acknowledge with gratitude the compliment you have paid me in prolonging my tenure of office beyond the usual limit, and the many other marks of kindness and sympathy you have shown me during these three years, which have been eventful years for me in many ways. I ask your leave to offer my respectful congratulations on the fact that you are about, in accordance with the unanimous recommendation of your Council, to elect in my place my valued friend, Mr. Rudler. His official connection with the Ethnological Society commenced in the year 1870, and from that time to the present his wise counsels, his active energies, his wide and deep resources of knowledge, have been freely given to the benefit of this Institute. In the year 1875 it was my good fortune to serve with him in the office of Director, in which office he succeeded me in the year 1881. He held it until 1890, when he became Vice-President. I hope and most entirely believe that increasing usefulness and prosperity will be the record of the Institute while he occupies the chair.

In respect to another office, also, a change takes place to-night. Mr. O. M. Dalton, whom we so confidently recommended to you two years ago, when Mr. Cuthbert Peek retired from the office of Secretary, has found that the increase in the weight of official duty incumbent upon him at the British Museum will prevent his continuing to give us his valuable services. It will be fresh in the recollection of all how well and successfully Mr. Dalton has carried out the arrangements for the

evening meetings during the last two years; and the excellent issues of our Journal under his editorship speak for themselves. Though he took office under the disadvantages of having only recently joined the Institute, and of following a Secretary so exceptionally equipped for the work as Mr. Peek, his ability and devotion have triumphed over all difficulties, and I am sure every member of the Council agrees with me in the expression of our deep gratitude to him for his services. This Institute has, indeed, never yet failed to find good men to carry on its work, and it is a great satisfaction to us that Mr. T. V. Holmes, who has served on the Council for eleven years, has kindly consented to accept the office of Secretary. I cannot refrain from adding that the Council has been fortunate during the past year in having the services as Assistant Secretary of a gentleman so well qualified for that office as Mr. J. Aplin Webster.

I now proceed to the usual review of the papers read before you during the year, the interest and variety of which confirm all I have said as to the excellent management of the meetings by Mr. Dalton.

Several of these papers belong to the department of Physical Anthropology; but as they are local in character, it will be convenient to consider them in connection with the continents to which they belong.

In the department of prehistoric archæology we had a paper by our Treasurer Mr. Lewis, who deduced, from a careful analysis of the measurements of the ancient monuments at Stanton Drew and at Merivale near Dartmoor, a series of numerical relations depending upon various significant numbers, which correspond in a remarkable manner with similar relations derived from the measurement of the ruins of Zimbabwe in Mashonaland.

In the department of Sociology, Dr. Colley March contributed a comprehensive inquiry into the myths which have grown up round the idea of a special degree of wisdom possessed by birds, a conception, which he traced to the ancient

Egyptians, and which is the common traditional property of many different races, and may even be said to survive to our own time in certain forms of religious iconography. Mr. Holmes disposed in a conclusive manner of the evidence for the efficacy of the diviner and his rod in the search for water.

On the Ethnography of Europe we had numerous papers. To begin with our own country:—Mr. A. W. Moore and Dr. Beddoe investigated the physical anthropology of the Isle of Man, as disclosed by a record of the characteristics of 1,112 men enrolled in the regiment of Royal Manx Fencibles, between 1803 and 1810, and compared them with the evidence collected by Dr. Beddoe 80 years later, confirming his conclusion that the population of that island, both in the north and the south, is Scandio-Gaelic. Mr. Holmes drew our attention to a curious relic of border life in Scotland, in a box used more than half a century ago for the smuggling of whiskey, when that commodity was taxed more heavily in England than in Scotland. Dr. Beddoe favoured us with another communication of great suggestive value, in which he showed that differences of complexion were traceable in Ireland according as the subject bore an indigenous or an exotic surname—the index of nigrescence being much lower in those who bear surnames indicating a mixture of race than in those who bear the ancient Irish tribal names.

Our much esteemed colleague, Dr. Topinard, of Paris, was so obliging as to communicate through Dr. Garson, the novel impressions derived by him from an observation of the peoples of Brittany, on a recent fourth visit to that part. He pointed out that the anthropology of Brittany and that of Britain touch in two points—that the special characters of neolithic man and of the men of the Bronze Age respectively correspond in both; and that the historic race which settled in Wales and Cornwall emigrated in large numbers into Armorica. He found two general types in Brittany: A, of medium size, long square and flat features; B, short in stature, ...h relatively short and round facial aspect, becoming (

angular in the lower parts. The general proportions of A are large head, rather short neck, rather large and square shoulders, a high trunk, moderately short strong and coarse members, large extremities; both in face and body not a beautiful type. B, on the contrary, has a small head, fine features, lively and expressive eyes, an agreeable and supple form and small extremities, and is a pleasing type. He distinguished also two special types of more rare occurrence: C, a tall, blonde population, known on the northern and western coasts as the English type, and D, which occurs among the Bigoudens of Pont l'Abbé, who resemble the people of Auvergne. He holds that type A is a combination of C and D, and compliments us by deriving its more unfavourable features from D:—while he traces type B to the autochthonous race of the neolithic or, as he puts it, *pour dire toute sa pensée*, of the palæolithic age—a suggestion which possesses the greatest possible interest for those among us who think that continuity is the key to many anthropological problems. For this reason, and also because of the weight which attaches to the communication as coming from Dr. Topinard, and the circumstance that it appears in our Journal in the original French, I have been tempted to refer to this paper at greater length than to others.

Two valuable contributions by Mr. Myres deal with copper and bronze in Cyprus and South East Europe; and with an early clay vessel from Amorgos, bearing a textile impression.

On the Ethnography of Asia we received from Miss Godden the completion of her most able monograph of the information we possess as to the Nágá and other frontier tribes of North India. We were also favoured by Sir George Robertson with a paper in the felicitous form of the narrative of the life history of one of the Kafirs on Kafiristan and its people, who inhabit that border country in the far North East of our dominion which is closely related to the present scene of hostilities there. Her Highness the Ranée of Sáráwak, Lady Brooke, supplied us with some effective photographs taken by herself repre-

senting the native races under her husband's rule, which were commented upon by Dr. Garson. At our last meeting Dr. Landis communicated a paper on the Capping ceremony of Corea.

On the Ethnography of Africa, Mr. W. B. Harris read a paper on the Berbers of Morocco, a people "who have held themselves aloof from Arab and European alike, and whose wild country has been visited so seldom that the explorers who have reached any portion of it can be counted on the fingers of one's hands." Mr. Seton-Karr recounted his discovery of the lost flint mines of Egypt in the eastern desert and his further discoveries of ancient Stone Implements in Somaliland, which now constitute an accumulation of evidence of the existence there of palæolithic man. Mr. H. C. Angus recorded his observations on the customs and superstitions of the people of Azimba and Chipitaland, during a year spent in travelling among them. Mr. Read and Mr. Dalton exhibited a marvellous collection of objects of art from Benin, since acquired for the British Museum. Mr. F. Shrubsall contributed a paper on the Cranna of African bush races, in which he establishes the distinctions between the Bushmen proper, the Hottentots, and the surrounding black races, by a series of careful measurements of skulls existing in various collections in England.

In relation to the Ethnography of America, we held, on the courteous invitation of Mr. and Mrs. Maudslay, a meeting at South Kensington Museum, where we inspected the magnificent collection of casts of the Maya Monuments and inscriptions made by Mr. Maudslay in Central America, and received from him a most lucid explanation of their meaning. Miss Fletcher gave us a paper on the significance of the scalp-lock. Mr. Joseph Numa Rat, of St. Kitts, contributed a paper on the Carib language as now spoken in Dominica, in the West Indies.

On the Ethnography of Australasia, we have also had a number of valuable communications. Mr. R. H. Mathews described and illustrated the various forms of Bullroarers used

by the Australian aborigines and also contributed a further instalment of his description of their rock paintings and carvings. Mr. Duckworth, of Jesus College, Cambridge, contributed (through Professor Macalister) the measurements of three skulls of male aboriginal Australians, which deviate but little from the averages deduced from the larger collection of observations which we owed to the kindness of the same gentleman in 1894. The Rev. Dr. James Chalmers furnished two papers—one on the Toaripi or Motumotu tribe, situated in the Gulf of Papua in Freshwater Bay, on the coast of New Guinea; and the other a valuable collection of anthropometric observation on natives of that Gulf, belonging to four different tribes. At a recent meeting we admired and discussed a splendid exhibit of remains from Rarotonga, by Mr. Moss; Mr. J. S. Gardiner contributed a paper on Rotumah; and we have finally to acknowledge a most interesting communication by Graf v. Pfeil on Duk-duk and other customs as forms of expression of the Melanesian's intellectual life.

In the department of Linguistics, besides some papers already mentioned, we have been favoured with a collection of songs and specimens of the language of New Georgia, Solomon Islands, by Lieut. B. T. Somerville, R.N., to which Mr. Sidney H. Ray added an introductory notice of Melanesian and New Guinea songs. We have also published vocabularies of the Bugilai and Tagota dialects of British New Guinea contributed by Dr. James Chalmers, to which Mr. Ray has added a note on the Western Papuan dialects; and a series of aboriginal vocabularies of North-West Australia collected by Mr. E. B. Rigby, also annotated by Mr. Ray. These valuable communications appear in the Anthropological Miscellanea in our Journal, a department of our work which has been conducted by our Secretary, Mr. Dalton, in the most admirable manner.

I pass on to the record of our losses by death during the year. That of Sir Augustus Wollaston Franks, great as it is, I need not now refer to at length, the brief and inadequate observations which I made on it at the time having already

appeared in the Journal. I will merely place on record the facts that he joined the Ethnological Society in 1863, was elected a member of its Council in 1865, and became a Vice-President of this Institute in 1874. For a long time he regularly attended our meetings, took an active part in the proceedings, and made a great number of communications to our Journal. His primary allegiance was due, however, to the Society of Antiquaries, which he had joined on the 15th December, 1853, and in which for many years he played a most distinguished part. His first contribution to "Archæologia" was made on the very day he became a Fellow, under the title, "Observations on an Ancient Fibula."

Sir A. W. Franks died at an advanced age after a long and brilliant career. In the death of Mr. J. Theodore Bent, the Institute has to deplore the early termination of a life of remarkable achievement and high promise. An intrepid explorer and a ripe scholar, Mr. Bent was also a man of singularly attractive and engaging character. His first communication to this Institute was in May, 1884, when he described the prehistoric remains of Antiparos and exhibited a large and interesting collection of antiquities brought by him from that island. In the next following year he read a paper on Insular Greek customs; and Mrs. Bent, his devoted wife and the comrade in his researches, exhibited and described a number of dresses and other objects from the Greek islands collected during three winters. In 1890 he read two papers, respectively on the Ansairee and the Yourouks, of Asia Minor. In 1892 he communicated to us his wonderful finds at the Great Zimbabwè ruins, and discussed them with a view to elucidating the origin of the race that built them. After that, he pursued his researches in the sacred city of the Ethiopians, and published a valuable work on that subject, as a sequel to his book on the "Ruined Cities of Mashonaland." In 1895 he recounted to us his visits to the Hadramaut and Dhofar, the frankincense and myrrh countries of South Arabia, with a description of the Bedouins of both districts and their different characteristics. He may be said, indeed, to be

one of the martyrs of science, his death having resulted from malarial fever caught in Africa. Mrs. Bent was, at the time, herself suffering from the same cause. In answering the letter which I was desired by the Council to write, expressing our sorrow and sympathy and our hopes for her speedy recovery, she was so kind as to say that, when well enough, she would look through Mr. Bent's papers and her own memoranda, and communicate to this Institute anything she might find that would interest us. We are now looking forward to the early fulfilment of this gracious and kindly promise.

Mr. Charles Harrison, M.P., whose sudden illness and death after attending the funeral of Sir Frank Lockwood are so much to be regretted, joined our ranks in 1869. The interest he took in our pursuits was especially marked by his having published, at his own expense, a fine selection of photographs of ethnographical objects from the collections in the British Museum, some of which he occasionally exhibited before us.

The venerable Mr. James Heywood, F.R.S., formerly M.P., had belonged to our body ever since the year 1844. I am not able to trace any communication by him in our proceedings, but I recollect that he took an active part in the work of the Anthropometric Committee of the British Association, of which he was a member.

Rear-Admiral Tremlett, who had reached his eighty-second year, died on the 5th April. His naval career commenced in the year 1830, and was one of distinction. It had been his custom for many years to spend some weeks in Brittany, and he became an admitted authority on the rude stone monuments of that country. He was always pleased to supply enquirers with copies of books, plans, and illustrations relating to them. On several occasions he read papers on that subject to this Institute, and he was a contributor to various archæological publications.

The recent announcement of the death of Dr. Charles Carter Blake carries our memory back to the early days of the Anthropological Society, of which he and our colleague, Mr. J.

Collingwood, were the first Honorary Secretaries. He was a pupil and assistant of Sir Richard Owen, who had a high opinion of his qualifications, and contributed a Preface to his "Zoology for Students." His accomplishments as a craniologist and his skill as a debater are testified by many entries in our early records, and it is a regret to us all that the great promise he held forth of a distinguished career should have been clouded over by illness and misfortune in his later days.

Foremost among the matters that have occupied our attention during the year has been the question, to which I referred in my last address—of the establishment of an ethnographic bureau. At the annual meeting you resolved, on the motion of Mr. Gomme, that the Council take steps during the year to find the best means of forming such a bureau and obtaining for it the support of Government. The Council, in compliance with this resolution, appointed a Committee for the purpose; and that Committee had the satisfaction of finding that the British Association was already moving in the matter. The Council has kept in touch with the proceedings of that Association in this business, through the kind offices of John Evans as intermediary, who is not only a past President of this Institute, but the actual President of the Association and one of the Trustees of the British Museum. We have every reason to hope that the Trustees of the British Museum will not be unwilling to accept the function of administrators of the bureau, and will urge upon the Government the propriety of making suitable provision for its establishment and maintenance. The Council of this Institute will not fail to do all that can be done to promote the successful issue of these negotiations.

As this Institute is much concerned in the position taken by Anthropology in the general meetings and at the Council board of the British Association, I may be permitted to refer to the proceedings of the pleasant and memorable meeting held at Toronto in August, where Anthropology, especially in that branch of it which deals with Archæology, was honoured

in the person of the President, Sir John Evans. As he most truly said, his "principal efforts have now for many years been directed towards attempting to forge those links in the history of the world, and especially of humanity, that connect the past with the present, and towards tracing that course of evolution which plays as important a part in the physical and moral development of man as it does in that of the animal and vegetable creation." In his address he brought under review the state of our present knowledge with regard to the antiquity of man, and remarked, "Is not this a case in which the imagination may be fairly invoked in aid of Science? May we not picture to ourselves our earliest ancestors in Eastern Asia, in a tropical climate, with the means of subsistence ready at hand, gradually developing from a lowly origin, acquiring a taste for hunting, if not indeed being driven to protect themselves from the beasts around them, and evolving the more complicated forms of tools or weapons from the simpler flakes that had previously served them as knives? If, when the stage of civilization denoted by these Palæolithic implements had been reached, game should become scarcer, and the hunter's life assume a more nomad character, may not a series of migrations naturally have ensued which, following the usual course of 'westward towards the setting sun' might eventually lead to a Palæolithic population finding its way to e extreme borders of Western Europe?"

A pleasant incident in the voyage of the "Parisian" steamer, which carried many of the party to Canada, was the collection Professor A. Macalister of anthropometric observations on the passengers. As measurements of a special group of individuals, these should be interesting, and I hope will be communicated to us at an early meeting.

The Anthropological Section was presided over by Sir William Turner, whose address, by way of distinction from those discourses in which the links uniting man to the animals have been dwelt upon, emphasised the specially human characters of mankind. The section was favoured by

presence of many anthropologists from Canada and the U States, among whom Dr. Dawson of Toronto, and Professors McGee of Washington and Putnam of New York, took an active part as sectional Vice-Presidents. Miss Alice Fletcher President of the Anthropological Section of the American Association, also attended the meeting and read several papers derived from her personal observation of the beliefs and practices of the Omaha and other Indian tribes. A distinctively Americanist tone was given to the proceedings of the section, which were terminated by a spirited discussion of the question of the Trenton implements and other finds in America alleged palæolithic.

The report of the Ethnographic Survey Committee, upon which this Institute is directly represented, contains the pletion of the typical collection of seven hundred and thirty-three observations of Scottish folk-lore made by the lamented Dr. Walter Gregor, and an abstract of the physical measurements taken by him. The Cambridge sub-committee reports the progress made in its survey of East Anglia; and other collections of anthropometric measurements are furnished from Cleckheaton in Yorkshire, Aberdeen, Banffshire, and the Island of Lewis. The sub-committee for Ireland is also proceedin with the work, the results of which are published by the Royal Irish Academy. An important Committee has been appointed for the Ethnographic survey of the Dominion of Canada, with which Mr. Hartland, Professor Haddon and I have bee quested to co-operate as British members. The Chairman that Committee is Dr. G. Dawson, now an honorary this Institute.

We all most heartily wish good speed and great success t Professor Haddon in his expedition to Papua in the interest of geographical, anthropological, and zoological science. understand that he hopes before he leaves England, which w be in a few weeks' time, to be able to issue a book on the of man, with especial reference to practical ethnographic wo —a publication to which we shall look forward with

, and which I have no doubt we shall find exceedingly useful.

Before leaving this subject, you will perhaps permit me to add that, as the Council of the British Association has paid the Institute and myself the compliment of nominating me to preside over Section H at Bristol, I shall hope to be supported by your presence there and by the contribution of papers from as many Fellows of the Institute as possible. I have also had the honour to be appointed by the Bibliothèque Nationale of France one of the jury to advise on the quadrennial competition for the Angrand prize of 5,000 fr.

I mentioned just now the election of Dr. Dawson of Canada as one of our honorary Fellows. We have likewise added to that distinguished list the names of Professor Sergi of Rome and Señor Troncoso of Mexico.

We have taken part in the proceedings for establishing an International Catalogue of Scientific Literature. Mr. Francis Galton has prepared for the Committee of the Royal Society which is engaged upon that work, a syllabus of Anthropology, which is appended to this address, and two representatives of the Institute (one of them Professor E. B. Tylor) form part of the National Committee for consulting with the Royal Society Committee as to the method of organising the Catalogue in this country upon the scheme they are elaborating. This important undertaking involves the cataloguing of all scientific literature upon a uniform system in all parts of the world, and is which this Institute will watch with great interest and do that may be in its power to promote.

The occurrence in a recent number of the "Archæological Journal" of a paper on Some Social Coptic Customs, by Marcus Simaika Bey, a gentleman belonging to one of the old conservative Coptic families, who writes from personal familiarity customs, some of which can be traced to remote periods ancient Egyptian history, leads to the observation that proceedings of Societies dealing with various phases of thropology frequently overlap. Though this paper would have

been equally appropriate to our own meetings or to those of the Folk Lore Society, I do not grudge to so eminent and learned a Society as the Royal Archæological Institute an occasional excursion into ancient Sociology; but I confess that I continue to regret the dissipation of energy caused by the continuance apart of two bodies which have so much in common as the Folk Lore Society and this Institute. My well-meant endeavour, a few years ago, to bring them together failed very signally. I am not without hope, however, in the interests of science and of economy, that it may some day be renewed by more capable hands, and with better prospects of success.

I must not pass without notice some recently-published contributions to anthropological literature. We have to congratulate Sir John Evans on the completion of a new edition of his classical work on "Ancient Stone Implements." The new material it contains, derived from the more recent discoveries, is discussed with the caution and reserve, which we know to be characteristic of our distinguished colleague, and which we recognise as ground for absolute confidence in him when he formulates a definite conclusion. The work in its revised form will remain, as it always has been, the principal authority on the subject with which it deals.

Miss Mary H. Kingsley's delightful work describing her Travels in West Africa is full of anthropological information. I may briefly summarize her description of the Bubis of Fernando Po. Unlike natives of other parts, they go ostentatiously unclothed, but wear a plaster of tola pomatum over the body, and a hat of plaited palm leaf, much adorned with birds' plumes, stick a piece of wood through the lobe of the ear, and hang a string of jujus round the neck. They also wear armlets and leglets of twisted grass, and girdles made of pieces of shell, which form their currency. Their houses are of two classes—houses of assembly and private living houses—the latter very small. They hunt chiefly with traps. They cultivate yams, koko, and plantains. They are physically a well-formed race, and their language is of a Bantu stock. [1]

make stone implements and use wooden spears. Their pottery is very rude, but their basket work is good. They use a peculiar form of musical instrument, made like a bow, with a tense string of fibre. One end of the bow is placed against the mouth, and the string struck with a stick and scraped with a shell.

I have not yet had the opportunity of reading the recently-published work of Mr. Grant Allen on the "Evolution of the Idea of God," and I am not therefore prepared to offer an opinion either on the method of the author's research or the nature of the conclusions at which he arrives; but I mention it in this connection because it appears to me to deal with a subject that is eminently one for anthropological enquiry. All our notions of the Divine Being are so essentially anthropomorphic—so necessarily derived from our own consciousness and limited by the limitation of our faculties—that the origin and development of the idea is a legitimate and fruitful subject for scientific investigation. That such a subject ought to be treated in a reverent spirit, and in such a manner as to avoid giving offence or shocking those feelings and sentiments which are esteemed to be precious by the great majority of mankind, goes without saying. I am much inclined to believe that the religious sentiment is as essential and natural a part of the constitution of man as any physical or mental character that he possesses—that it has been implanted in him by the Creator in the same manner, and passed through the same processes of evolutionary development. In this respect, as in every other, the order of the universe is expressed in continuity and not in cataclysm.

In the present day every scientific society must be deeply interested in the popularising, or, as our French friends say, the *vulgarisation* of its pursuits. From this point of view I would call attention to a most attractive volume by our member the Rev. T. J. Hutchinson, on "Marriage Customs," which cannot fail to interest its readers in some problems of comparative sociology. I may also mention that in connection with the Society for the Extension of University Teaching, Mr

E. A. Parkyn is delivering a course of ten lectures on the Natural History of Man.

An admirable series of lectures on the Racial Geography of Europe, delivered by Professor William Z. Ripley, of the Massachusetts Institute of Technology, is being published, with ample illustrations, in "Appleton's Popular Science Monthly." The eleventh lecture of the Series relates to the British Isles. In preparing it, Professor Ripley has made excellent use of the collections made by the Photograph sub-Committee of the Anthropometric Committee of the British Association, which, by the courtesy of that Association, were entrusted to this Institute for safe custody and for the purposes of study when that Committee had completed its labours. It gave me great pleasure to move the Council that these photographs should be placed for that purpose at the disposal of Professor Ripley; they most cordially assented to the request, and the result has amply justified them in doing so.

If, upon this summary of the year, I take upon myself to assert that the Science of Anthropology and the Anthropological Institute are living, are useful, and are progressive, I shall not fear contradiction, for the facts are all in my favour. I may perhaps be permitted, however, in this my swan-song, to conclude with some observations on the unsolved problems which yet remain and the work which still lies before us.

I submit, as postulates, the unity of the anthropological sciences, on which I dwelt in my first address, and the doctrine of continuity, to which I referred in my second address. Much indeed remains to be done before the consequences of these are worked out.

The innumerable links in the chain of existence which mark the successive stages of development consequent on the acquisition of the erect posture, indicated in the masterly writings of Dr. Munro—the true history of the apparent break between the palæolithic and neolithic periods—the philosophy of the disappearance of races—and a hundred other problems relating to physical anthropology—are still unsolved.

The origin and development of modes of thought, especially in relation to matters of religion and of superstition—in which Mr. Herbert Spencer, Professor Tylor, and Sir John Lubbock have so worthily led the way—are a field for endless speculation and investigation.

Finally, the actual observation of man as he exists by means of that essential part of science which consists in measurement, combined with the accurate record of his passing mental phases, may well be pushed forward with greater assiduity and perseverance. We study a noble science. Rightly pursued, it may affect the mind of man more beneficially than possibly any other. It may teach the student to look back to the hole of the pit whence he was digged:—to look forward to a future that he may contribute to make better and brighter:—to look around upon all nature as akin to him, and upon the various races of mankind in the light of the duty that he owes to them:—to look upward to that Creator who first implanted in all nature the faculties that have made man what he now is, and may make those who are to come after even more capable of being useful and being happy.

Appendix.

Royal Society of London.—International Catalogue Committee.

Anthropology.

A. General Works.

B. Museums and Collections.

1. Catalogues, guides, and descriptions.
2. Methods of preserving and arranging anthropological specimens.

C. Archæology.

1. General works.
2. Antiquity of man, place of origin.
3. Prehistoric remains, descriptive, comparative, topographical.
4. Contemporary fauna and flora.

5. Prehistoric dwellings, buildings, and graves.
6. Occupations and industries of prehistoric man.

D. Anthropometry.

1. Instruments and methods.
2. Craniology, osteology.
3. External features (form, colour, hair, teeth, &c.).
4. Human faculties, physical powers.
5. Criminal anthropology.
6. Monstrosities and abnormalities.
7. Human statistics.

E. Races.

1. General works.
2. Classification by name and language.
3. Racial peculiarities (physique, fertility, pathology, &c.).

F. Industrial Occupations and Appliances.

1. General works.
2. Dwellings, buildings, furniture.
3. Food, drink, narcotics, &c., cookery.
4. Domestic animals, pastoral life.
5. Agriculture.
6. Clothing.
7. Spinning, weaving, sewing, basketry.
8. Fire-making, illuminants.
9. Ceramics, glass-making.
10. Stone-working.
11. Metallurgy.
12. Carpentry, mechanics.
13. Fishing.
14. War, hunting.
15. Navigation.
16. Land transit and transport.
17. Trade, commerce, barter, currency.

G. Arts of Pleasure.

1. General works.
2. Music, vocal and instrumental.

3. Poetry, recitation, folk-tales.
4. Dances and drama.
5. Plastic and graphic arts.
6. Personal adornment (ornaments, painting, tattooing, artificial deformation).
7. Games.

H. Communication of Ideas.

1. Speech, language, grammar.
2. Gesture language, signals.
3. Symbolic messages and records, pictographs, writing, maps.

I. Science (chiefly of primitive races).

1. General works.
2. Counting and arithmetic.
3. Mensuration.
4. Astronomy, geography.
5. Medicine, surgery, hygiene.
6. Other sciences.
7. History.

J. Superstition, Religion, Customs.

1. General works.
2. Creeds, mythology, folk-lore.
3. Priesthood, rain doctors, &c.
4. Witchcraft, charms, magic.
5. Ceremonies at birth, puberty, marriage, death, and burial.
6. Other seasonal ceremonies (seed time, harvest, &c.).
7. Cannibalism.

K. Administration.

1. Governing powers.
2. Crimes and punishments
3. Oaths, ordeals.
4. Property, inheritance, contracts.
5. Marriage restrictions.

L. Sociology (chiefly of primitive races).

1. General works.
2. Relation of the sexes.
3. The family and clan, distinctions of caste and rank.
4. Slavery.
5. Societies and clubs.
6. Morality, ethics.

Specimen of proposed Index (but it should contain many more words than these). Names of races and languages as sub-headings to E 2, and are to be indexed apart.

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It was moved by Mr. A. P. MAUDSLAY, seconded by Mr. A. J. EVANS, and unanimously resolved:—

"That the thanks of the Meeting be given to the President for his address, and that it be printed in the *Journal* of the Institute."

The SCRUTINEERS gave in their Report, and the following gentlemen were declared to be duly elected to serve as Officers and Council for the year 1898.

President.—F. W. Rudler, Esq., F.G.S.

Vice-Presidents.—H. Balfour, Esq., M.A.; John Beddoe, Esq., M.D., F.R.S.; E. W. Brabrook, Esq., C.B., F.S.A.; Sir John Evans, K.C.B., D.C.L., F.R.S.; Sir W. H. Flower, K.C.B., LL.D., F.R.S.; Francis Galton, Esq., D.C.L., F.R.S.; Rt. Hon. Sir John Lubbock, Bart., F.R.S.; Prof. A. Macalister, M.D., F.R.S.; A. P. Maudslay, Esq., F.R.G.S.; Cuthbert Peek, Esq., M.A., F.S.A.; Lieut.-General Pitt Rivers, D.C.L., F.R.S.; Prof. Edward B. Tylor, D.C.L., F.R.S.

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Assistant Secretary.—J. Aplin Webster, Esq.

A vote of thanks to the retiring President, Vice-President, and Councillors, as well as to the Secretary, the Treasurer, the Auditors and the Scrutineers, was moved, seconded, and carried by acclamation.

ANTHROPOLOGICAL MISCELLANEA AND NEW BOOKS.

Readers of the Journal are invited to communicate any new facts of especial interest which come under their notice. Short abstracts of, or extracts from letters, will be published at the discretion of the Editor. Letters should be marked "Miscellanea" and addressed to The Secretary, 3, Hanover Square, W.

"Religions of Primitive Peoples." By Daniel G. Brinton, LL.D. (American Lectures on the History of Religions. 2nd Series. New York, 1897. 254 pp., 8vo.)

This book embodies the substance of six lectures delivered by Dr. Brinton in Boston, New York, Philadelphia, and other cities during 1896–97. The lectures are placed under the following headings: "The Scientific Study of Primitive Religions: Method and Definitions"; "The Origin and Contents of Primitive Religions"; "Primitive Religious Expression in the Word"; "Primitive Religious Expression in the Object"; "Primitive Religious Expression in the Rite"; "The Lines of Development of Primitive Religions." The enumeration of the titles will indicate the extent of the ground which Dr. Brinton covers; and the reputation of the writer for original research in this and other studies connected with the early history of man is of itself sufficient guarantee for the interesting and suggestive nature of the book. Dr. Brinton finds that the universal postulate, the psychic origin of all religious thought, is the recognition "conscious volition is the ultimate source of all force"; and that whether we consider the highest religions, or the earliest and most primitive cults, the foundation of belief lies in the unalterable faith in mind, in the supersensuous, as the ultimate source of being. Not less important than this primary faith is the belief in its corollary, that with this mind or conscious intelligence man is in continual communication.

Some of Dr. Brinton's most interesting pages are devoted to fact that the inspiration of the savage seer is based upon the suppression of the reason and the superseding of the consciousness of everyday life by a state of sub-consciousness, in which the seer is but dimly aware of his utterances. During this sub-conscious

state the divine influence is supposed to obtain freer access; and what is in reality the expression of submerged ideas not hitherto focussed by attention is obeyed by those who hear it as the very accent of the god himself. The ascetic practices to which most medicine-men resort have for their object this very abdication of reason, which, in view of the nervous and emotional condition to which the seer is reduced, can generally be produced without very great difficulty. "Man owes less to his consciousness than his sub-conscious intelligence, and of this religion has been the chief interpreter." Dr. Brinton has treated the various parts of his wide subject in a lucid and attractive manner, and all the lectures are eminently readable. The volume is furnished with an index of authorities and an index of subjects.

"The American Antiquarian," in Nos. V and VI of vol. xix, contains:—"The Palæolithic Age," extracts from the Address of Sir John Evans, D.C.L.; "A Relic of De Soto's Expedition—found in Alabama," by H. S. Halbert; "The Symbol of the Hand," by Lewis W. Gunckel; "The Geography of the Tsimshian Indians," by G. A. Dorsey; "The Age of the World and the Age of Man"; "Totems Inscribed upon Papuan Skulls" (illustrated), by G. A. Dorsey and William H. Holmes; "The Bone Age in Europe and America," by Stephen D. Peet; "Table of Manners of Ancient People"; "The Religion of China and Mexico," compared (illustrated), by James Wickersham; "Borings in Coral Formations," by John Fraser, LL.D.

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